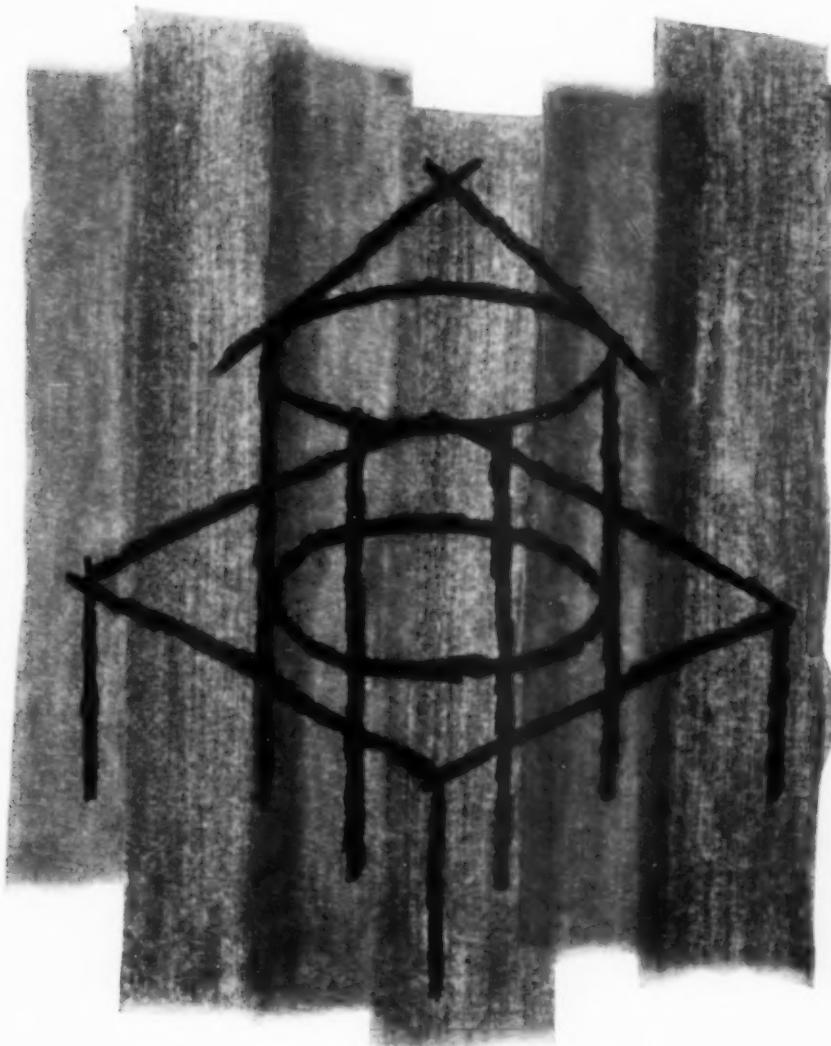




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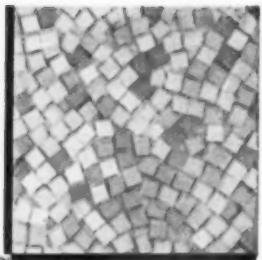
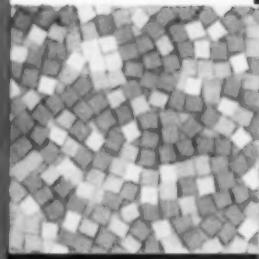
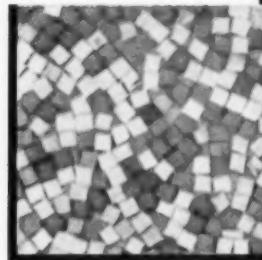
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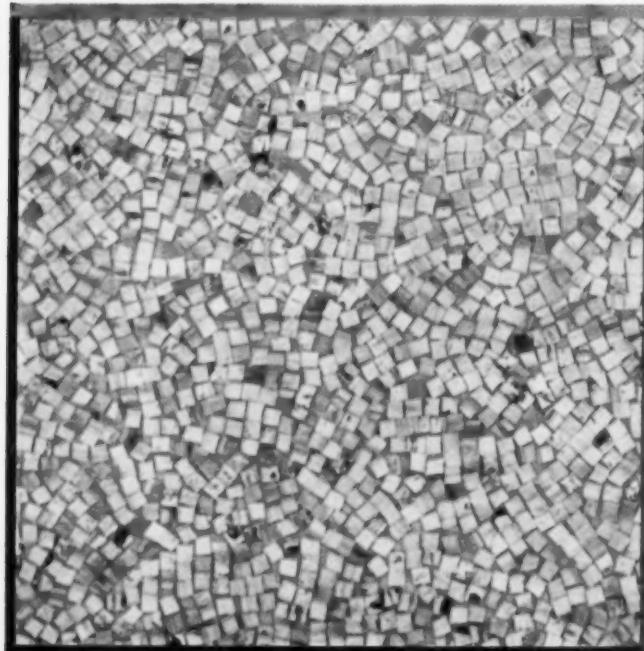


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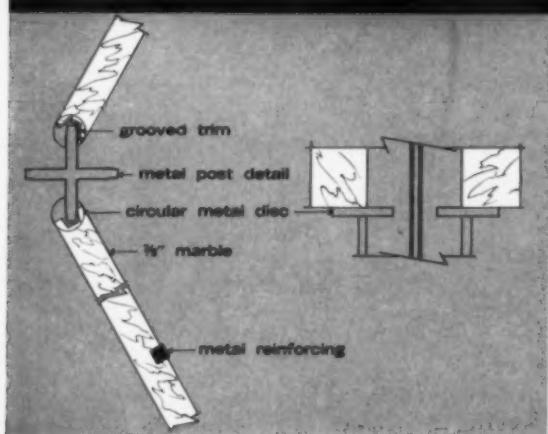
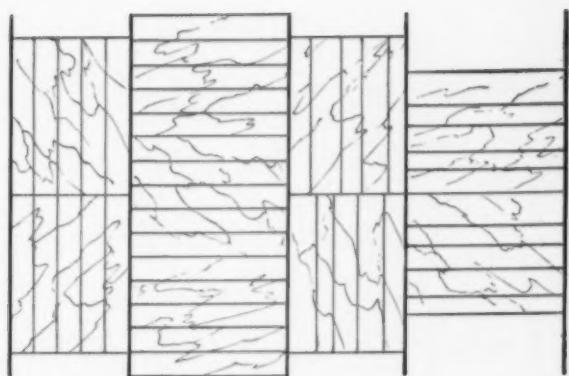
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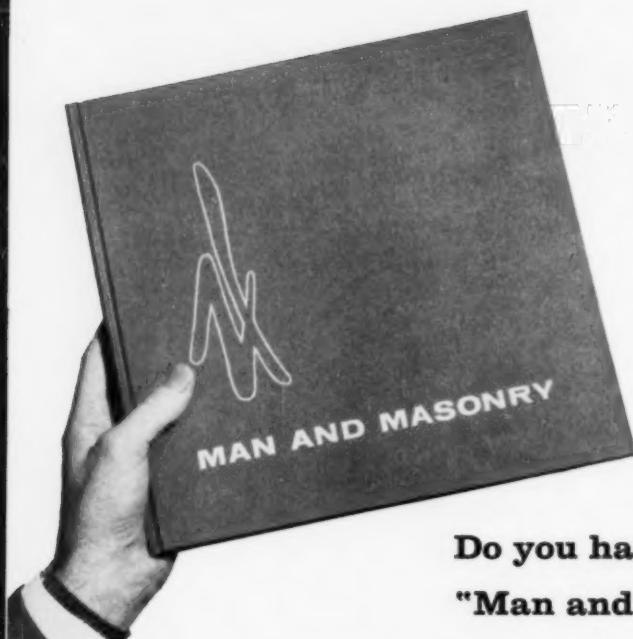
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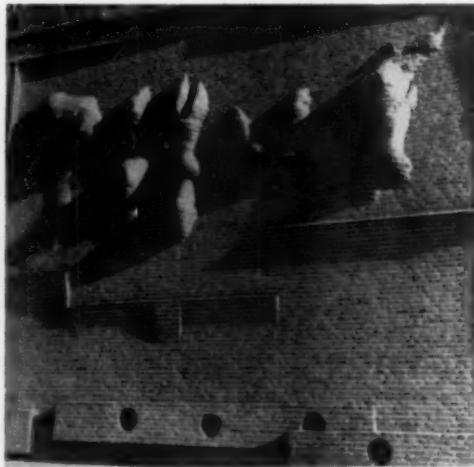
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THE COVER

This month's cover illustrating our lead story on "Primitive Shelter," was designed by the *Journal's* Assistant Art Director, Marilyn S. Housell.

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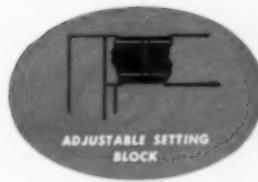


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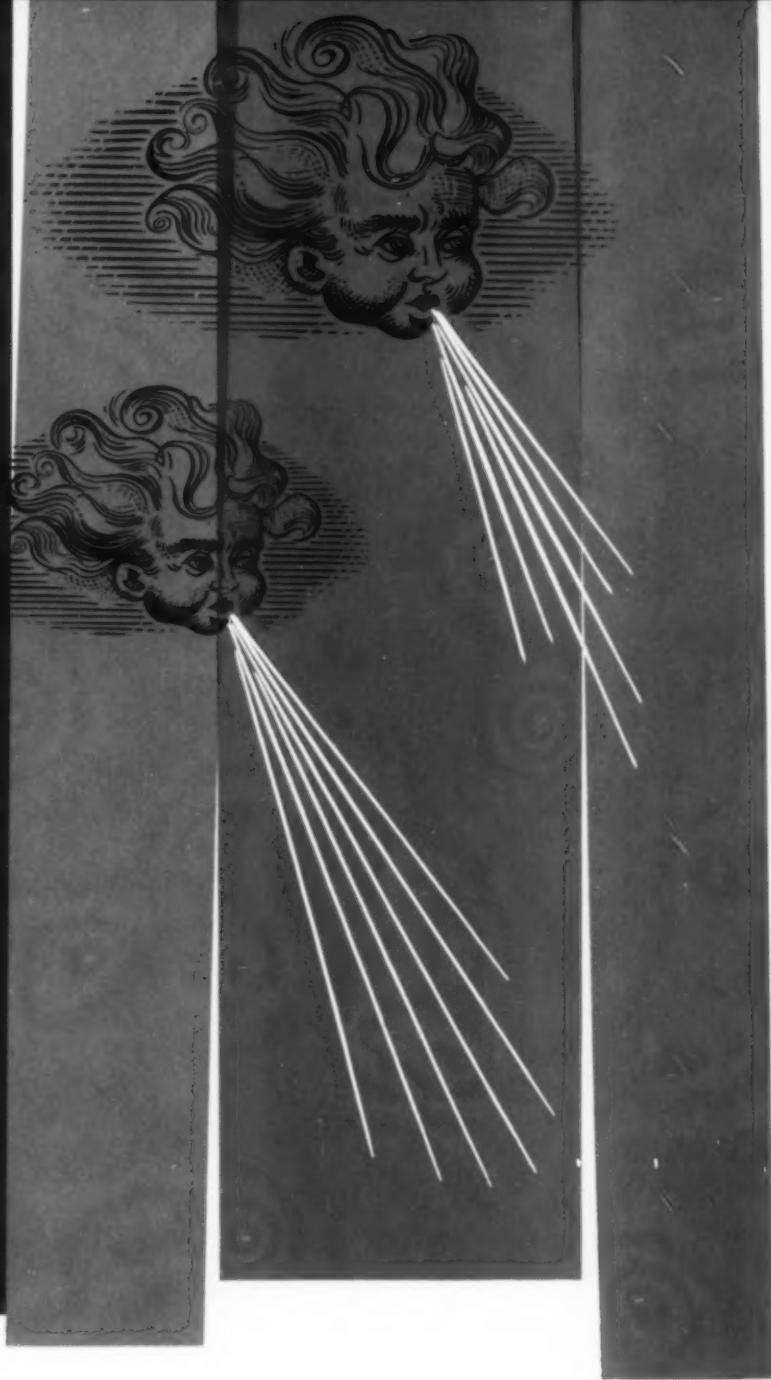
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their functions



1

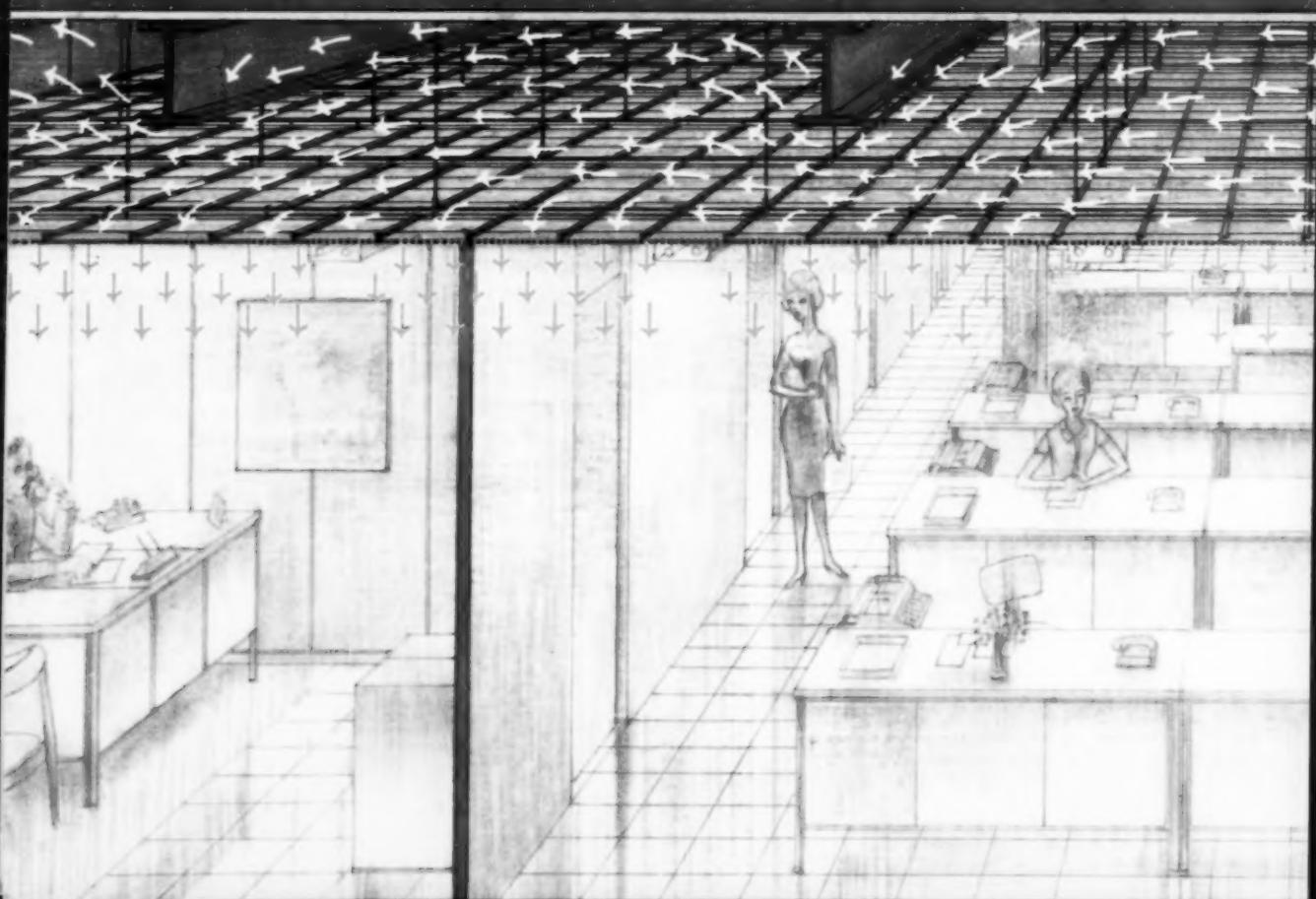
*They air-condition—
providing uniform air diffusion*

Since the ceiling itself serves as a diffuser, an even flow of air is provided into and throughout the room. An Armstrong Ventilating Ceiling enables you to eliminate drafts and stagnant areas. Even in low-ceiling areas, draft problems can be eliminated. The picture below of a section of an office building shows how conditioned air is forced, under pressure, from the central unit through ducts to the duct stub supplying each plenum chamber. The result—comfort for all occupants.

2

*They're self-cleaning—the down pressure
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3

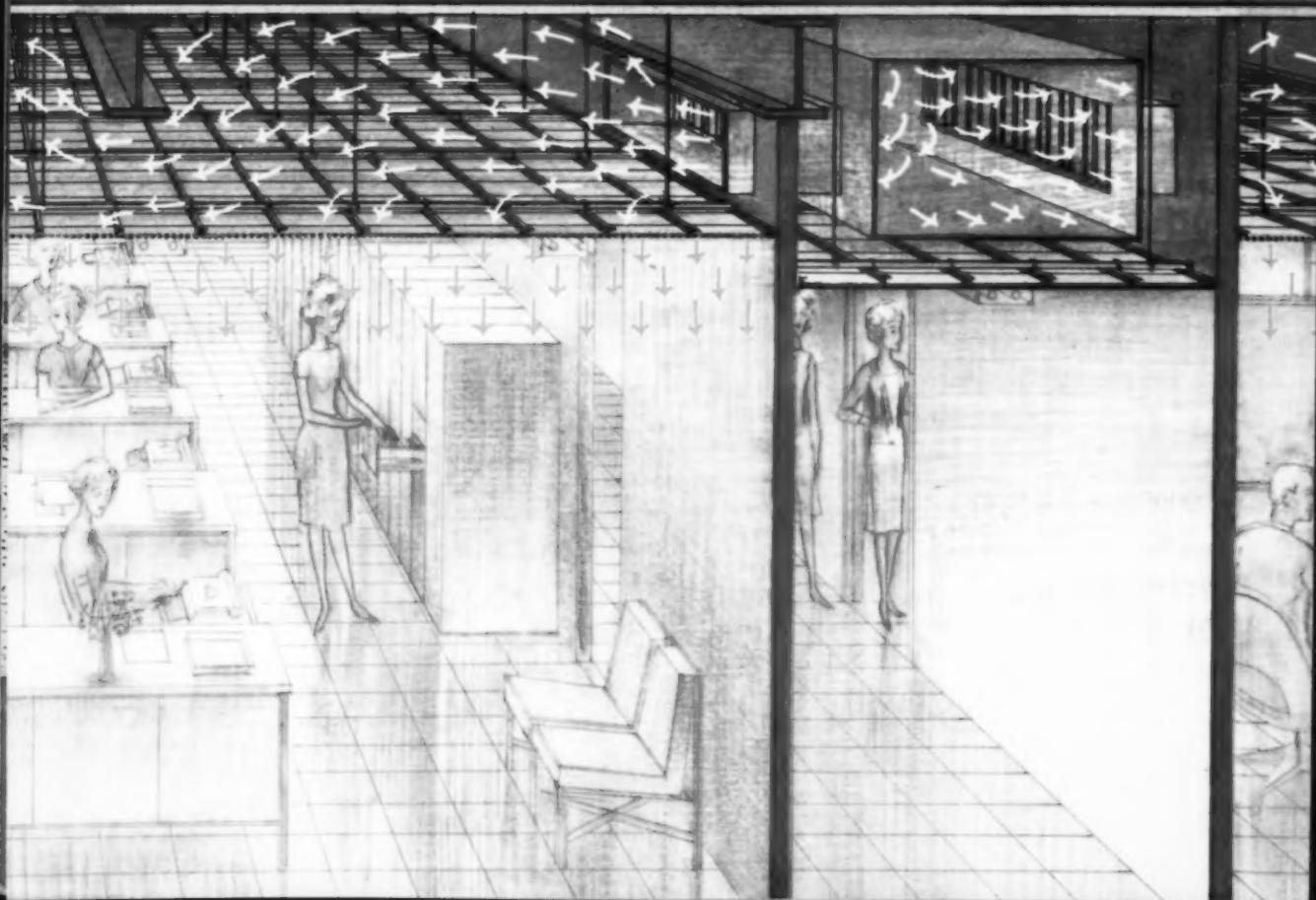
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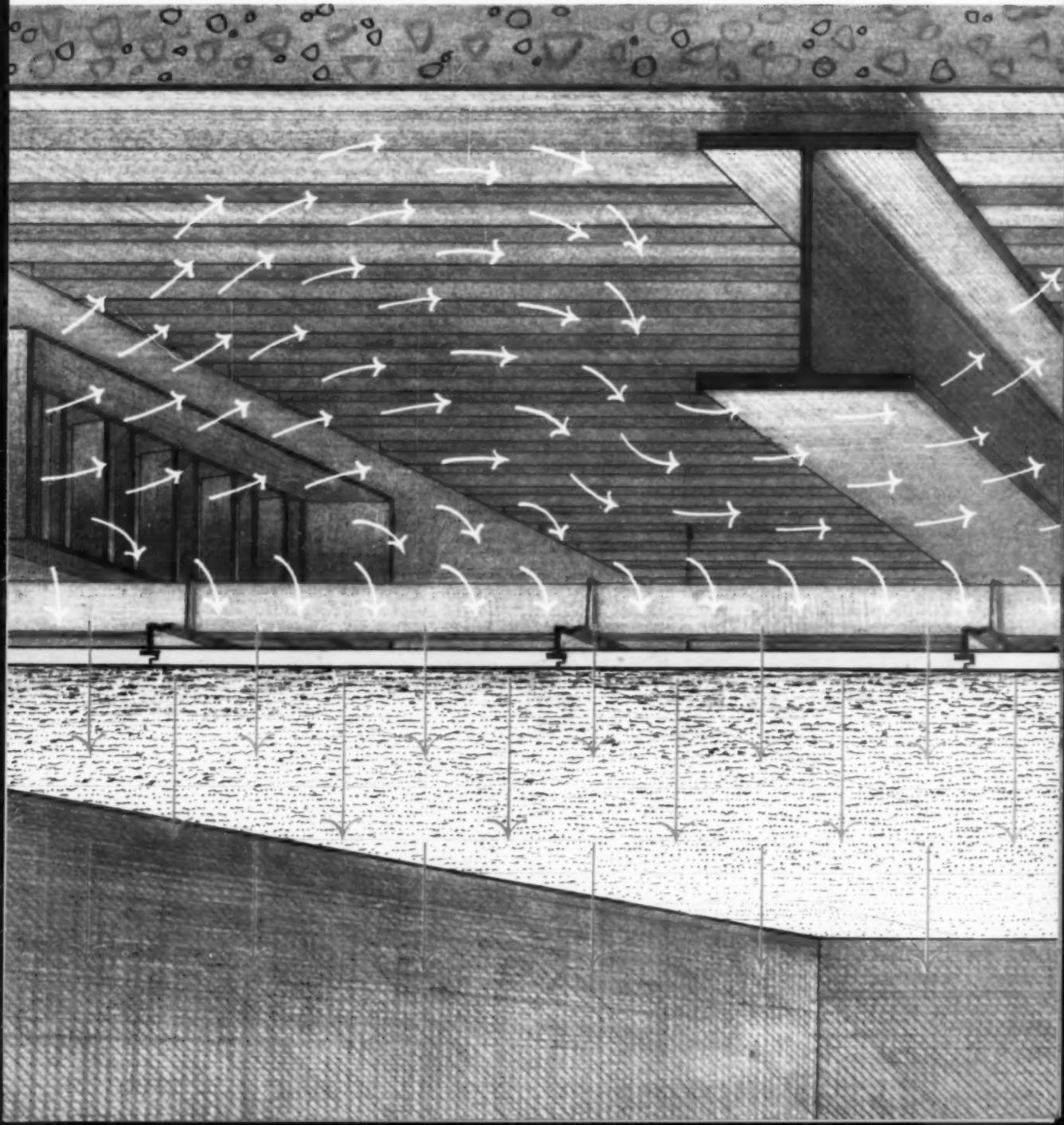
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1

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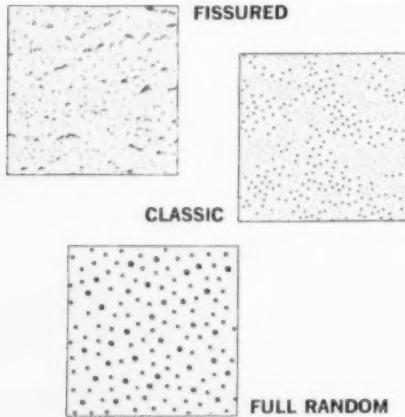
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architect: Snedaker-Budd-Monroe & Associates, Salt Lake City
mechanical engineer and contractor: Richard C. Brown, Mayne
Plumbing and Heating, Salt Lake City
general contractor: Cannon Construction Co., Inc., Salt Lake City
acoustical contractor: Utah Pioneer Corp., Salt Lake City

Northern Federal Savings and Loan Association, St. Paul, Minn.

architect and ventilating engineer: Associated Architects
and Engineers, Inc., St. Paul
mechanical contractor: Pierre Aircon Co., St. Paul
general contractor: William Baumeister Construction Corp.,
St. Paul
acoustical contractor: St. Paul Linoleum and Carpet Co., St. Paul

Arizona Bank, Home Office Motor Bank, Phoenix

architect: Lester Byron, Phoenix
general contractor: Ray P. Petersen Contractor, Inc., Phoenix
acoustical contractor: Barrett-Homes Contractors, Phoenix

Armstrong General Office Building, Lancaster, Pa.

consulting engineer: Charles S. Leopold, Inc., Philadelphia
mechanical contractor: B&G Olsen Co., Inc., Richmond, Va.
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chief designer: John Jones, Philadelphia
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architect: R. B. DeJeager, company architect, Moline, Ill.
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general contractor: Axel Carlson Company, Moline
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architect: Ralph Haver & Asso., Phoenix
mechanical engineer: Lowry & Sorensen, Phoenix
general contractor: Gilbert & Dolan, Phoenix
acoustical contractor: Barrett-Homes Contractors, Phoenix

St. Paul's Church Home, Inc., St. Paul, Minn.

architect: Buetow and Associates, St. Paul
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Letters

FDR Memorial

EDITOR, *Journal of the AIA*:

I have read with great interest, in the July *Journal*, your editorial on the FDR Memorial. I was greatly pleased that at last someone has taken a close look at the over-all site problem in relation to the Memorial. Until now, all editorials and articles have been about the soaring tablets, with little or no recognition of their relationship to the site and to the rest of Washington.

I was especially pleased to read your comment that the design "will benefit greatly from the collaboration of a Landscape Architect," but disappointed by your later comment that "A bit of greenery within the enclosure will do much to relieve . . ." This reflects the basic error of architects; namely, that the contribution of the landscape architect to site development is principally the addition of trees and shrubs. Unfortunately, most architects do not realize the full scope of services of the landscape architect and too often consider his role that of a plantsman embellishing the site with greenery. I believe that the jury showed an astonishing lack of recognition of the site possibilities in their comments on some of the winning solutions.

HAROLD BREEN, ASLA
New York, NY

Ed. note: I humbly accept your gentle chiding for underrating the landscape architects—or perhaps, I should say mis-rating. I can say I really didn't mean it that way. The siting of the design is wrong, and the entire project should have had a landscape architect from the beginning. I speak now with extra feeling, for I recently returned from the Convention of The American Society of Landscape Architects in Boulder, Colorado, and I have come away with a far greater appreciation of the broad services which the true professional landscape architect (as opposed to the "bushpusher") can furnish.

Symmetry in Nature

EDITOR, *Journal of the AIA*:

Expression of the issues of architectural design in terms of metaphorical comparison is apparently the *bête noire* of the profession. History chronicles the effort of more than one otherwise capable practitioner to do battle with this semantic devil. It's a bloody tale. Alberti tried mathematics; Palladio, music; Sullivan had at morality; and Wright never faltered in his futile lunges at organic.

One must admire Mr Greeley's spirit in attacking that most elusive and brutal image, nature. The number of foolhardy architects who have got lost in the verbal morass that accompanies this innocent looking metaphor is staggering.

Unfortunately, another victim must be claimed, for contemporary science is apparently convinced that the basic structures in nature are, in fact, asymmetrical (viz. J. Robert Oppenheimer). Further, I think one must recognize that the "predisposition" of certain objects in nature for symmetrical shape is invariably frustrated by the facts of life (ie "My Camera at Point Lobos," by Edward Weston).

However, Mr Greeley's example has given me heart to renew my own somewhat more modest and Zen inspired attack, "Architecture is like a fountain . . ."

HARRIS STONE
San Francisco, Calif.

EDITOR, *Journal of the AIA*:

"Classical Symmetry In Nature And Architecture" which was published in the July issue of the *Journal*, deserves more than a laudatory passing comment. I should like to congratulate Mr Greeley for his praise-worthy work of simple, clear exposition of an important theme. The editor is certainly entitled to a bow for his foresight in realizing the value of the article at this opportune time, which, I am sure will illuminate many of us who are a little misoriented and many more who are prejudiced against the reaffirmation of any classical theory of the past.

Predominating the contemporary point of view, certain elements are confusing important issues because of strong antipathy towards any conviction recalling balance, symmetry and harmony as a recourse in the effort to create art.

The obvious counterpart would be "Asymmetry in Nature and Architecture" and many would indicate that this is also apparent in art and in nature specifically in the vast array of geologic form for which as much can be said, depending on the analysis applied. Since Mr Greeley treats beautifully the premise of living nature and organic matter reflected in architectural symmetric form, a reappraisal based on the concept of architecture as "organic" versus the "unorganic material shaped to form" could reveal nature's reason for a preference—and might facilitate not only the resolution of this enigma, but, nature's parallel in favor of the symmetric or the asymmetric. It would also be interesting to note whether the scale of an architectural composition would tend to relate more

(Continued on p. 20)

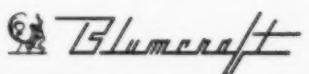


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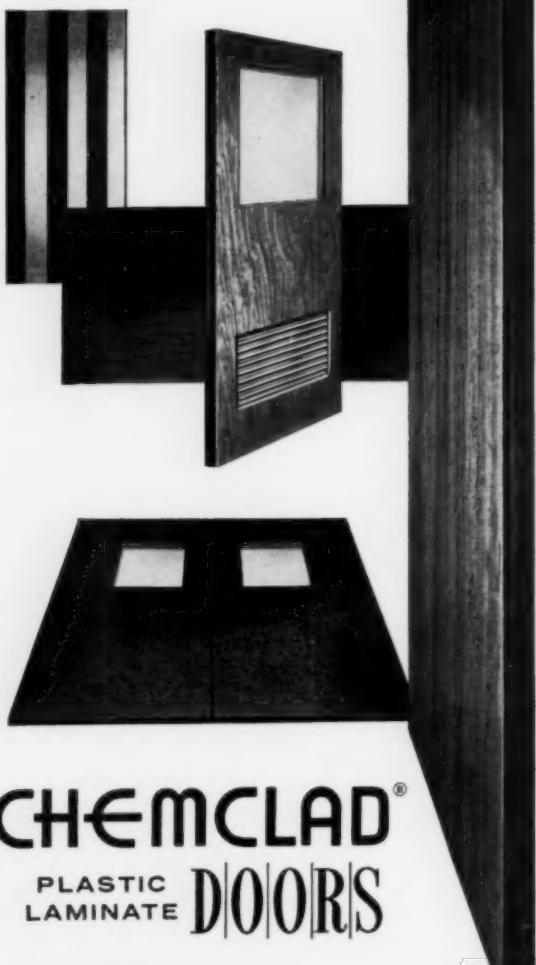
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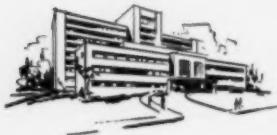
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Letters (Continued)

to a geomorphic mass than to animal or vegetable forms.

Presenting this antithesis, I am sure many of our colleagues would be interested in an accompanying article on the "Asymmetry in Nature and Architecture" so as to bring to a fruitful conclusion a very interesting study. I realize that this is a challenge because the material is scarce and fine architectural examples are not over-abundant.

J. CAPONNETTO
Hartsdale, NY

EDITOR, *Journal of the AIA*:

Melancholy Reflections—or: Reflections on some well-known lines near the beginning of Bannister Fletcher, with apologies to Longfellow: ". . . Ah, to paint, to sculpt!

Those are the noblest arts of all the arts.
A building's but an all-conditioned slave,
Fashioned by man's most gross and petty need
For ducts and plumbing, having in itself
No existence. Finer arts,
Detached from daily want and common task,
Burdened by neither structure, cost, nor fools,
Outshine sad substance with a sweeter light."

JOHN KENYON, ARA
Eugene, Oregon

The Journal to ASLA

EDITOR, *Journal of the AIA*:

I applaud your offer of the *AIA Journal* to ASLA members. I believe as a landscape architect it is one of the necessary first steps to be taken to achieve greater understanding and harmony between the two professions.

It is my belief that our respective journals are not exercising the influence (as mouthpieces of our organizations) that they have the power to do. Your action is indicative of the type of progressive thinking required for presenting, defining and clarifying the diverse issues that are increasingly confronting our professions.

I heartily endorse your action and hope that it is only the beginning of an era that will attempt to foster cooperation between the AIA, ASLA, and AIP to an ever greater extent.

WALTER H. KEHM, ASLA
Cambridge, Mass

Ed. Note: The *AIA Journal* has been offered all members of ASLA at the special price of \$2.00 in order to foster better relations among the two professions.

(Continued on p. 22)



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Letters (Continued)

Landscape and Space

EDITOR, *Journal of the AIA*:

Having long entertained a decided concern for the problem discussed by my fellow landscape architect, Professor DeDeurwaerder, in your August issue, I beg leave to offer a minority dissenting opinion.

The professor speaks of a "very special treatment of the negative element we live in—space."

Far from being a negative element, space is the one element which is most positive and most essential for architecture of any sort. With no creation of space, architecture becomes sculpture, and landscape architecture degenerates to become mere landscape decoration. Further, the treatment of this most important element is not special for design personnel either in architecture or in landscape architecture as a major controlling element of design. It is special only with respect to emphasis, to detail of material and technique, and to scale.

The term 'landscape architect' is an awkward hybrid, but so far no one has been able to suggest a better. If it is to be accepted, practitioners must first of all qualify as architects. The vocabulary, the ABC, of space design is to be found only in architecture. When the alphabet has been mastered, attention may be extended to cover the special techniques which may be called for, indoors or outdoors.

Some fifty years of observation lead me to believe that both architects and landscape architects are generally apt to be indifferent or insensitive to the architecture of space out-of-doors. Is it possible that this may suggest the answer to Mr John J. Klaber's complaint, in "Letters" of the same issue?

EDWARD HUNTSMAN-TROUT, FASLA
Beverly Hills, Calif.

Modular Measure

EDITOR, *Journal of the AIA*:

Please accept our sincere appreciation for a very wonderful presentation of the article on modular measure in the August *Journal*.

We are very delighted with the beautiful layout, the fine credit, but more than anything else we are delighted that we have received inquiry from one New England firm regarding a beginning in modular measure. We thought you would be interested to know that we have hit a target.

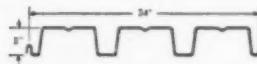
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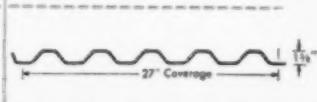
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News

Applications for Brunner Scholarship

Applications are being accepted for one of the nation's top architectural awards, the Arnold W. Brunner Scholarship, a \$5,000 grant, according to the New York Chapter of The American Institute of Architects.

The Scholarship, sponsored annually by the Chapter, is open to American architects who have advanced professional background. It calls for study in some special field of architectural investigation which will contribute effectively to the practice, teaching or knowledge of the profession. Each candidate may choose his subject of study, according to Emanuel N. Turano, Chairman of the Chapter's Brunner Scholarship Committee.

As part of his application, the candidate is required to submit his choice of subject with an outline of his proposed studies, research and necessary travel. Under normal conditions the Scholarship must be completed within one year from the date of the grant.

Projects for which the Scholarship has been awarded in the past include a study of urban living through the movement of people, the creation of a traveling architectural exhibit for high school students, the compilation of a guide to contemporary architecture of Europe, and a history of city planning. The most recent grant was made to architects Richard A. Miller and Arnall T. Connell for their proposed study of visual perception as it is related to design.

Application blanks for the award and further information may be obtained from the New York Chapter, AIA, 11 East 40th Street, New York 16, NY. January 15 is the deadline for submitting applications.

Competition Winners Announced

The Ruberoid Company has announced the winners of the Third Annual Architects' Competition sponsored on behalf of the company's Mastic Tile Division. The winning designs best achieved the objectives of the competition's theme: "Long-range Planning for the Medical Care Facilities in the Community."

Two categories of prizes were awarded. All entries were eligible for national awards with a special group of prizes for students of architecture. For the first time in the history of the competition, a major prize was won by a group of students. Two other student groups, winners of

the top two special student awards, were also recipients of Merit Awards in the National judging.

Grand Prize of \$10,000 was awarded to Victor A Cusack, AIA, Ronald Meza and James S. Moore, AIA, of Beverly Hills, California.

The jury commented that the entry was "a well conceived and well balanced plan for hospital operation and economy of hospital construction, relating well to present services and those to be added in the future, and expressing the suburban quality called for." Site utilization for the main part of the building is excellent as is the placement of staff housing facilities across the stream. Its concept of a central vertical circulation serving the nursing units in three directions is sound, according to the judges.

The Second Prize of \$5,000 was awarded to the student team of Jimmie W. Bruza, James F. Knight, James S. Daley and William C. Watson, Jr., of Oklahoma State University.

The jury classified this entry as one whose concept captures the best of accepted hospital planning received, with an architectural approach and technique that is direct and concise and has pleasing mass relationships. "Particularly impressive is its careful articulation of discreet functions, its relative ease of expandability and simplicity of traffic flow."

The Third Prize of \$2,500 was awarded to John V. Sheoris, AIA, of Detroit, Michigan, and William J. Johnson, ASLA, and Clarence Roy, ASLA, of Ann Arbor.

The main feature of this plan in the eyes of the jury is its non-hospital look which, through dispersion, attempts to recognize the countryside atmosphere of the site . . . "a very ingeniously thought out scheme."

Reservations are being accepted by The Ruberoid Company for a handsome fifty-six-page brochure which will present in large scale the winning entries and jury comments in the Third Annual Architects' Competition. Planned for publication late in 1961, copies can be reserved now by sending \$1 per copy to cover postage and handling costs to Architectural Brochure, The Ruberoid Co., 733 Third Ave., New York 17, NY.

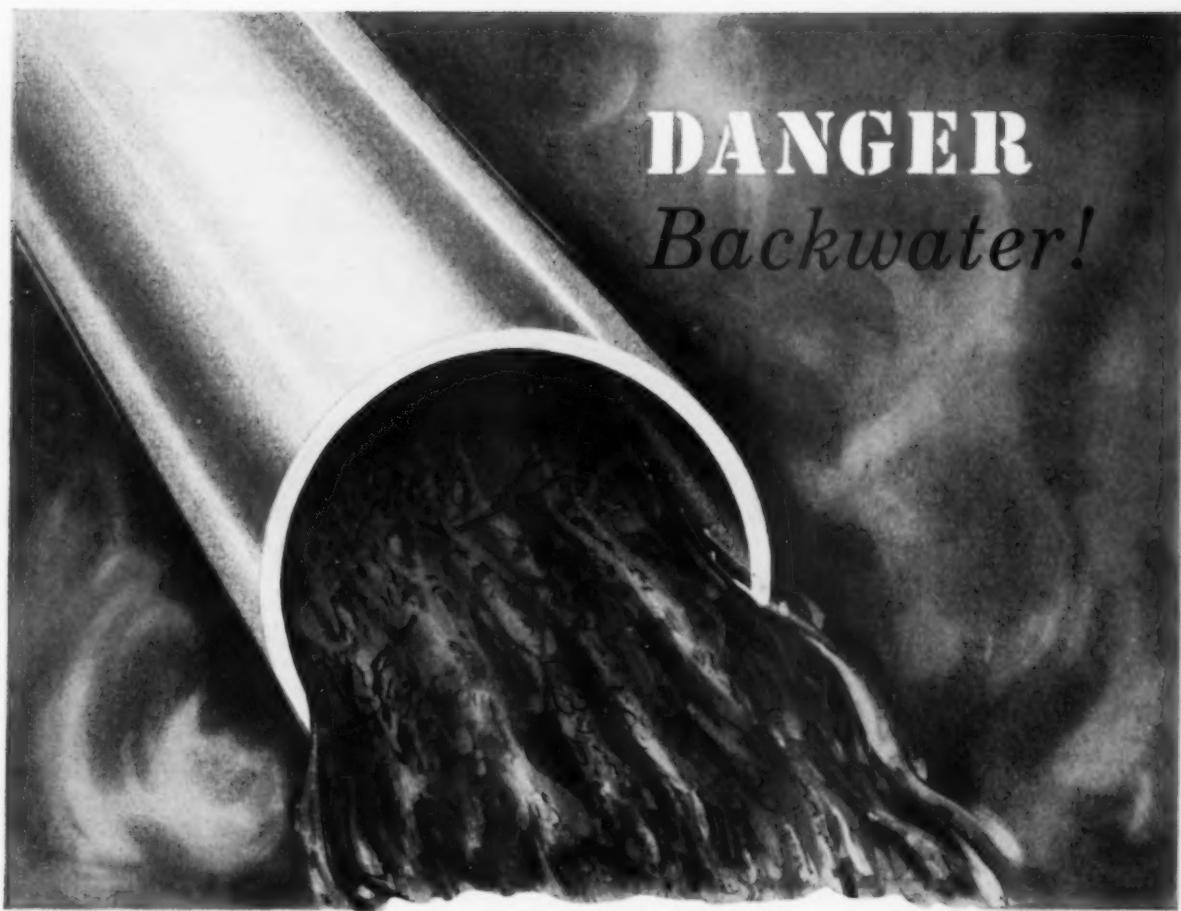
ACI Meeting

A diversified technical program is scheduled for the 14th Regional Meeting of the American Concrete Institute to be held at the Dinkler-Tutwiler Hotel in Birmingham, Alabama, November 1-3.

Technical committee meetings are planned for Wednesday, Nov. 1. The next day and a half will

(Continued on p. 26)

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—Marcus Aurelius Antoninus

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In order to meet that demand, the Quality Verification Council of the Porcelain Enamel Institute has undertaken a program of quality research and certification. The QV program provides for unannounced inspections by an independent consultant to verify the continuing capability of participating companies to meet the established QV standards.

As a result, the architect may specify Quality Verified architectural porcelain enamel from any certified member of the QV Council. Those who demand the highest quality will "ever quickly seek their kind"—and find it bearing a QV label.

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News (Continued)

be devoted to presentation of papers in four different sessions—design, construction, materials and structural research, followed by a field trip to a local construction project.

Subjects of papers to be presented include bridges, silos, lightweight precast frames, chimneys, blast furnace slag in concrete, mass concrete, cracking, testing reinforced concrete floors, and field testing. Other papers will deal with composite beams, prestressed concrete design, beam tests, composite T-beams using epoxy resins as shear connector, prestressed bridge, and high strength reinforcing.

Engineering Institute on Paints

The University of Wisconsin, Madison, Wisconsin, will conduct an Engineering Institute on Paints November 30-December 1. Designed to present objective information on paints, the Institute should be of interest to architects and specification writers as well as contractors. The program will review recent developments in the paint industry and present information necessary for specification and the assurance of quality finishes. Special emphasis will be placed on exterior finishes. Complete information may be obtained from John Peterson, Institute Coordinator, University of Wisconsin.

The Journal for Sale

Two thousand copies of the September "architect-homebuilder" issue of the *AIA Journal* are now on sale to members of both professions at \$1.00 per copy.

Because the Institute believes that the issue will be an excellent public relations media for the professions, it is hoped that both builders and architects will purchase copies singly or in lots in order to distribute to their clients.

Since the quantity is limited, orders will be filled on a first come, first served basis and checks or money-orders must accompany each order. All orders should be addressed to the *AIA Journal*, 1735 New York Avenue, NW, Washington, DC.

"The Architecture of America" At Reduced Price

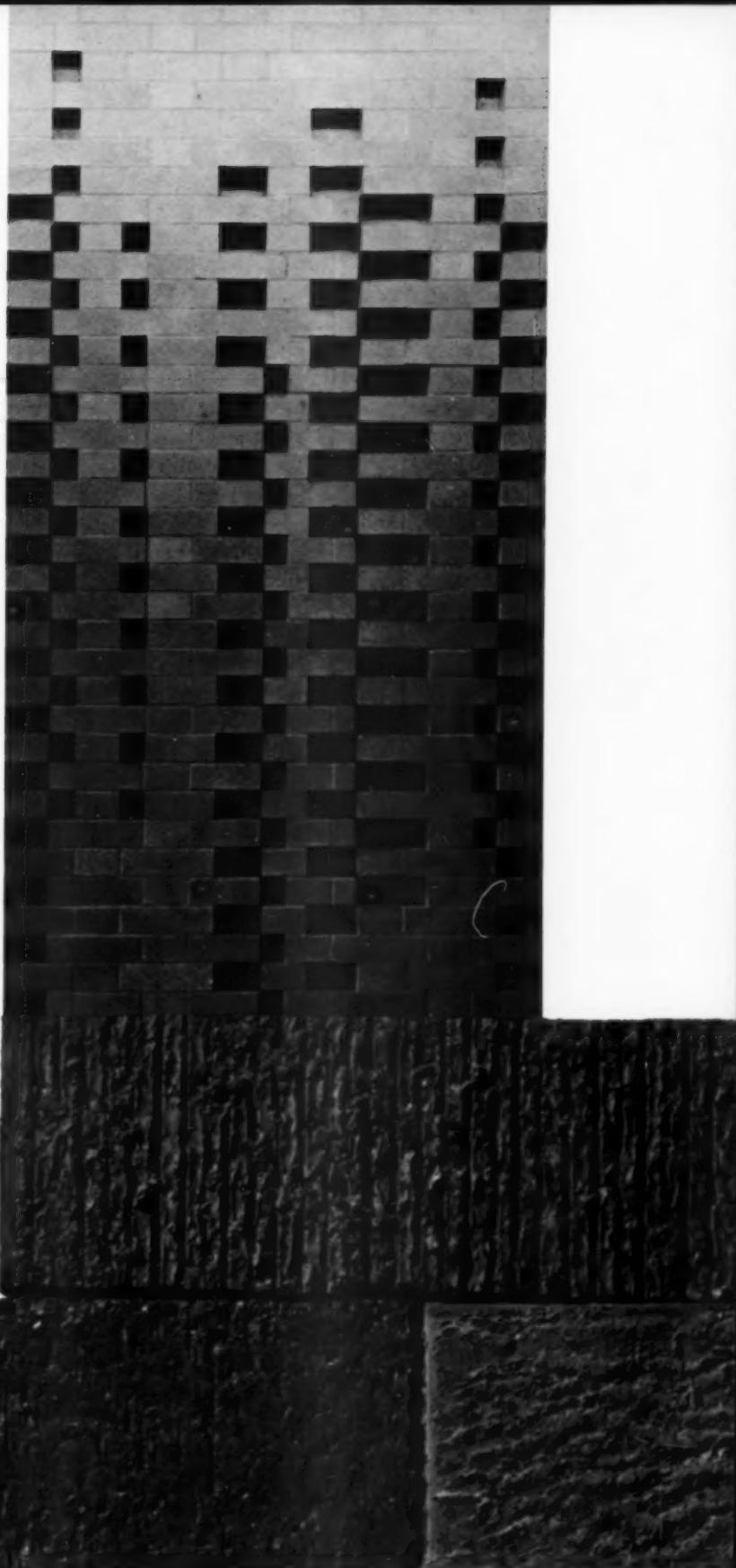
A limited number of "The Architecture of America," the fast-selling book by Albert Bush-Brown and John Burchard, may be purchased directly from the Institute at the special price of \$7.95. Excerpts from this book that has earned the praise of reviewers and readers all over the

(Continued on p. 28)

Structure As Mural

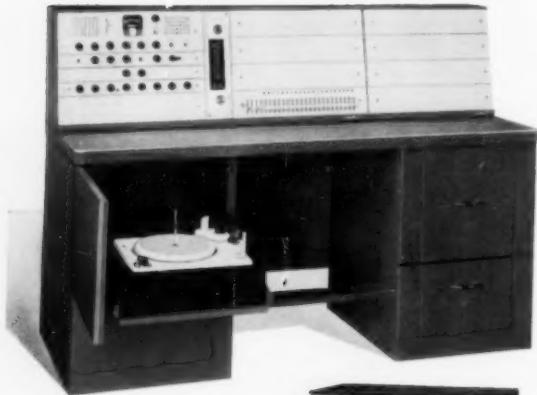
The pattern and texture of brick become art in structure. To the viewer, they offer delight; to the artist, the endless esthetic challenge. The building: Harvard Graduate Center.

The artists: The Architects' Collaborative; abstract wall pattern by Professor Josef Albers.

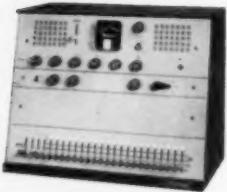




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News *(Continued)*

country, were published in the April and May issues of the *Journal*.

Orders should be addressed to the Institute and checks or money-orders must accompany each request. When the present Institute supply is exhausted, the book will have to be purchased from the bookstore at the regular retail price of \$12.95.

Airconditioning Program

A program demonstrating to architects the interrelationship of architecture and airconditioning was launched in two cities, Denver and Baltimore, on March 9 and March 16 and has since been shown in twenty-eight other cities from coast to coast. The program has been developed in seminar form by the Producers' Council at the request of the Institute, using strip film and record, the presentation shows how architects sometimes create problems and how they can aid in the best solutions to airconditioning requirements. Not overly technical and not commercial, this fine educational seminar is designed specifically for architects who want to improve their understanding of airconditioning.

More than 1500 architects and their engineers have seen the presentations to date. The Seminar is now being scheduled by Producers' Council for other cities in the United States.

RAIC Appoints New Institute Secretary

Harland Steele, President of the Royal Architectural Institute of Canada, has announced the appointment of Maurice G. Holdham, MBE, of Ottawa, as Secretary of the Royal Institute. Mr Holdham joins Institute headquarters following nearly thirty-three years of service with the Royal Canadian Air Force.

Fifty-one years of age, Mr Holdham brings to his new position a broad administrative background gained with the RCAF in Canada and abroad. He served as Administrative Officer in the Canadian Joint Staff at Washington and as Secretary for Canada of the Combined Committee on Air Training in North America. After acting as Staff Officer in Personnel Administration at No. 1 Air Division, RCAF in Metz, France, for one year, Mr Holdham assumed similar duties at Air Materiel Command, Rockcliffe, for four years. Latterly, he has been Senior Staff Officer in the Directorate of Personnel Administration at Air Force Headquarters in the rank of Wing Commander.

The new Institute Secretary is married with three children. His appointment fills the position left vacant by the death of the late Leonard Fallis at the latter part of April.

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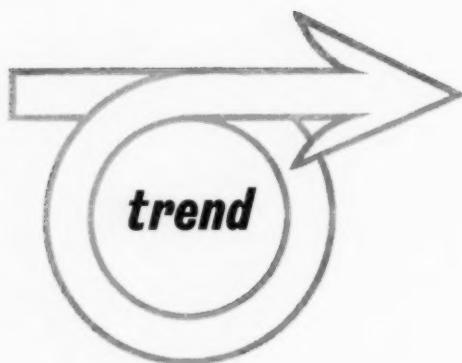
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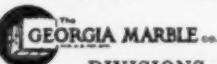
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First Federal Savings & Loan Association, Augusta, Georgia
Architect: Kuhike & Wade, Augusta, Georgia
General Contractor: Clarence Mobley Contracting Co., Augusta, Georgia
Material: White Georgia



National Bank of Detroit
Architect: Albert Kahn, Detroit, Michigan
General Contractor: Bryant and Detwiler, Detroit, Michigan
Material: White Georgia



Fulton Federal Savings & Loan Association,
Buckhead Branch, Atlanta, Georgia
Architect: Thompson, Hancock & Hackworth, Atlanta, Ga.
General Contractor: Jiroud Jones & Company, Atlanta, Georgia
Material: White Cherokee Split Face, 4½" rise

A two-part study of structure and form in the earliest habitations of man, reprinted from the Bulletin of Engineering and Architecture, No 46, of the School of Engineering and Architecture, University of Kansas. At the time the study was made, the author was visiting Assistant Professor of Architecture at the University

Primitive Shelter

by Cardwell Ross Anderson, RAIC

► As an introduction to the intermediate level of architectural design, the Department of Architecture of the University of Kansas has for several semesters issued a problem based on the study and analysis of the elementary structures used by man throughout the world as a habitation and a home. This problem, entitled "Primitive Shelter," is intended to develop research ability and an interest in the evolution of the house which will provide the student with a basis for the study of residential planning which follows in the same semester.

Within the terms of this problem the student is required to investigate a specific type of primitive habitation selected from any part of the world at any period of time. A maximum of two weeks amounting to thirty hours of design time has been allowed for the project, the presentation of which includes drawings, a brief text and a carefully built model.

The variety of the illustrations recording the students' work at the University of Kansas, together with the intrinsic interest of the subject of primitive shelter itself, has prompted the assembly of the available material from the years between 1958 and 1960 for publication. It is hoped that this publication will be of value to the general reader, the student and the teacher and also, since most of the models are large, delicate and difficult to transport or store, that it will provide the means for preserving a valuable record which might otherwise be lost.

The models of the shelters illustrated, together with much of the information included in the related captions are the results of work by individual students. The text is an effort on the part of the instructor to relate the studies to one another and to offer some comment on the relevance of these studies in the present day.

Significance and Limitations

Due to the strict limitation of time available to the student for the entire project, no sources of information could be studied profoundly or supplemented except from readily accessible texts. However, since a carefully constructed model will readily expose errors in theory, it permits the builder to re-solve structural problems in a manner which is consistent, if not identical, with that involved in the original structure itself. In this respect, the student is no worse off than the archaeologist who must often reconstruct a shelter from little more than a few charred depressions in the ground, and I believe therefore that a certain basic accuracy has been attained which makes these projects scientifically valuable.



The home of the Sioux Indians, the tepee, was a practical tent-dwelling which could be collapsed quickly and dragged along as they followed the buffalo herds. It consisted of fifteen to twenty straight poles fifteen to thirty feet long and a buffalo cover. The poles were erected in a circle upon a tripod, sloping gently toward the front to form a tilted cone.

The following paragraphs are arranged to illustrate the common characteristics which relate the various examples of primitive shelter throughout the world and then to suggest some of the specific influences which have moulded the forms of these habitations and directed their development. It would be difficult to provide an inclusive series of illustrations showing the great variety of shelters which have occurred through every remotely habitable portion of the earth. Yet,

the very multitude of choices has, during a brief period of time, produced a representative selection. Through these, limited as they are, it may be possible to compare the elements shaping the evolution of the house and perhaps through an effort of the imagination, to assess the importance of these elements in the design and construction of buildings today.

Shelter, Storage and Privacy

Constant Needs, Diversity of Style

At widely varied periods during the development of civilization throughout the world, man has sheltered in one sort or another of primitive habitation. These habitations have differed from place to place and age to age according to influences as diverse as the climate and character of the lands where they occurred and the community patterns or technical proficiency of the people who built them. Even within a limited region local styles of buildings may be observed, like the subtle distinctions between the three-pole and four-pole tepee which occurred among neighboring tribes of North American Indians.

Yet despite the differences, distinct as they may be through greater ranges of time and space, the simple homes of all people share at least some characteristics—fundamentally they are built to shelter man from the elements, to provide privacy and protection for his family and to house his belongings.

Harry L. Shapiro comments on this in the publication of the American Museum of Natural History, *Homes Around The World*, noting "Plus ça change, plus c'est la même chose,"—the more it changes the more it remains the same thing. The diversity of domiciliary styles should not mask from us the fact that the basic needs a house is designed to satisfy are constant necessities which all forms of habitation serve with more or less efficiency and elegance." These basic needs are shelter, storage and privacy, and with respect to these the house of today differs only in degree from the tent of the nomad or the palace of a king.

Shelter

Shelter from the elements, and occasionally from enemies, is a fundamental necessity to man. Being unprotected by nature, except through his intellect and ingenuity, man is obliged to adapt his environment to himself rather than adapt himself to his environment as do animals and birds—and this he does through artificial enclosures such as clothing and houses.

Nearly all classes of men have built houses, perhaps first in trees like the ape who builds a rough sort of nest well away from the risks on

the ground, or in caves or under overhanging rocks with piles of stones or branches to provide a crude enclosure. It seems likely that even among man's earliest unrecorded shelters diversity was a common characteristic and with further development the house becomes an object of almost unlimited variety.

Storage

Then, as Mr Shapiro points out, even if man could adapt himself to his environment without the use of shelter the possessions he inevitably accumulates could not, and he would eventually need to build something for storage whether he needed a house for his personal welfare or not. In actual fact, he needs both shelter and storage space and this has led in many cases to the development of structures especially designed for one or the other or both. The silo-like structures used by the Mesakin people of central Africa serve as granaries, stables and houses. In the lodges of the Hidatsa and Mandan tribes of the American plains, livestock, possessions and large family groups share the same simple enclosure.

Privacy

This characteristic of a single enclosure serving a multitude of purposes, including both shelter and storage, is not uncommon among primitive dwellings and in some cases whole tribes inhabited a single structure. The need for privacy, as we know it, seems to appear to man as a sophistication rather than a basic necessity. Yet its importance cannot be overlooked.

Occasionally privacy of a limited sort is imposed on a people. This occurs among nomads in a land which supports a sparse population where each family group must remain independent to survive. Possibly as a result of this, we find in certain situations a progressive development toward a complicated community structure where the individual family, if not the individual himself, is accorded a specific place relatively free of interference. One of the most striking communities of this type is to be seen among the cliff-dwellings of the Pueblo cultures of South-Central North America whose origin appears in the pit-like structure of the early semi-nomadic inhabitants of the plains.

The House and its Purpose

The need for independence and freedom of the sort which only privacy can provide has become an increasingly important consideration in the design of shelter, and it seems likely that it will continue to be so. In civilized communities, the role of the nomad is eventually eliminated and with increasing density of population it is essen-



The Wichita Indians who occupied what is now Oklahoma and Arkansas lived largely by agriculture and consequently built villages and lodges of relative permanence. The form of the lodges was roughly conical and the size varied from fifteen feet to forty feet in diameter. The exterior was decorated with tufts of grass. From this came the name "grass house"

tial that the need for privacy of both individuals and family groups be recognized and satisfied. It is here principally that we discover the development of purpose and form in the house or shelter to be continuous. Although the relative importance of its functions change, its purpose, that of providing man with a good living environment, does not.

Universal Qualities of Good Building

Esthetics

The basic characteristics of good building design are simplicity and integrity. These qualities can be assessed in a building in much the same way as in a person. Simplicity means the freedom from unnecessary mannerism, and integrity means independence and honesty. The soundest analysis of the esthetic quality of any building, ancient or modern, will be based upon these considerations for without them an esthetic judgment becomes an arbitrary question of taste. Applied to the primitive habitations of man, one usually finds that these qualifications are fulfilled.

Simplicity and Integrity

The quality of simple materials and elementary fastenings is difficult to violate. If poles laid to-



The Mesakin homestead of the Sudan in northern Africa consists normally of five huts and include a sleeping hut, kitchen, granary, brewing cellar and a pigsty which is combined with a sleeping place for children. The turret-like mud structures are roofed with a basket-like structure constructed upside down on the ground and put in place like a hat. The central court is roughly covered with sticks and grass

gether in the form of a cone are not lashed firmly and placed in proper sequence, the result will be a disordered woodpile, but not a tepee. Thatch laid the wrong way up or tied insecurely will leak or blow away. The use of mud for an enclosure without due respect for the elements would be impractical or at least impermanent. And useless elaboration is discouraged due to the encumbrance it would impose on the builder or the inhabitant. The integrity of elementary structures is to a degree inherent; their simplicity is enforced. Most primitive structures, having withstood the test of time, are in the strictest sense good buildings.

A Comparison

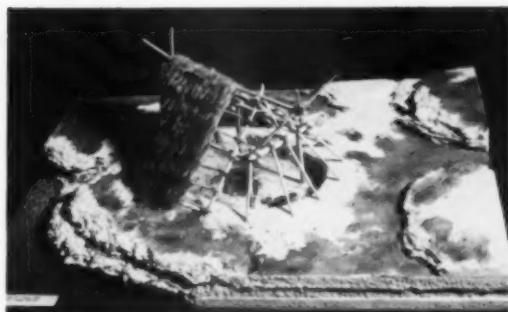
Primitive man built well because he could not do otherwise. Today new conditions have to be met and the question of how to build a house is not so easily answered. With advanced technology almost anything can be substituted or made to stand up and the expedient solution to a problem of structure and materials is not always inherently the best or most consistent. It seems that in the primitive state, neglect of the natural characteristics of a material would eventually lead to an obvious physical failure of the structure itself, whereas, in the present day, with such ready discipline suppressed, the right use of a material demands considerable, sincere intellectual effort. Respect for the quality of materials is one of the most important lessons the primitive builder has to teach.

Custom and Continuity

Function vs Habit

Although the physical refinement and ascetic simplicity of primitive habitations is admirable, many of the examples studied are distinctly limited in functional adaptation and comfort. Function alone, at least in the sense of complete fitness, has often been neglected or suppressed in favor of other considerations which to an outsider may seem arbitrary. The habits peculiar to a certain people may overlay and restrict practical requirements to a large extent producing forms which appear at odds with the environment they are designed to combat.

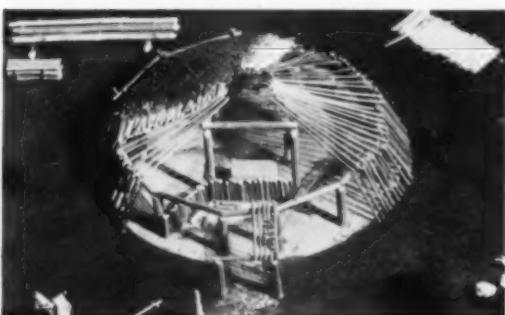
The nomad tribes of Lapland inhabit a tent with an open top so broad that it is apparently not uncommon to find the walls piled with snow as deep inside as out. And very little can be said for the functional advantages of the diminutive hut built by the African Pygmy which by any standard is too small even for the inhabitants themselves. The height of the Pygmy is four feet, six inches; the diameter of the hut which the Pygmy builds of branches and leaves scarcely exceeds five feet.



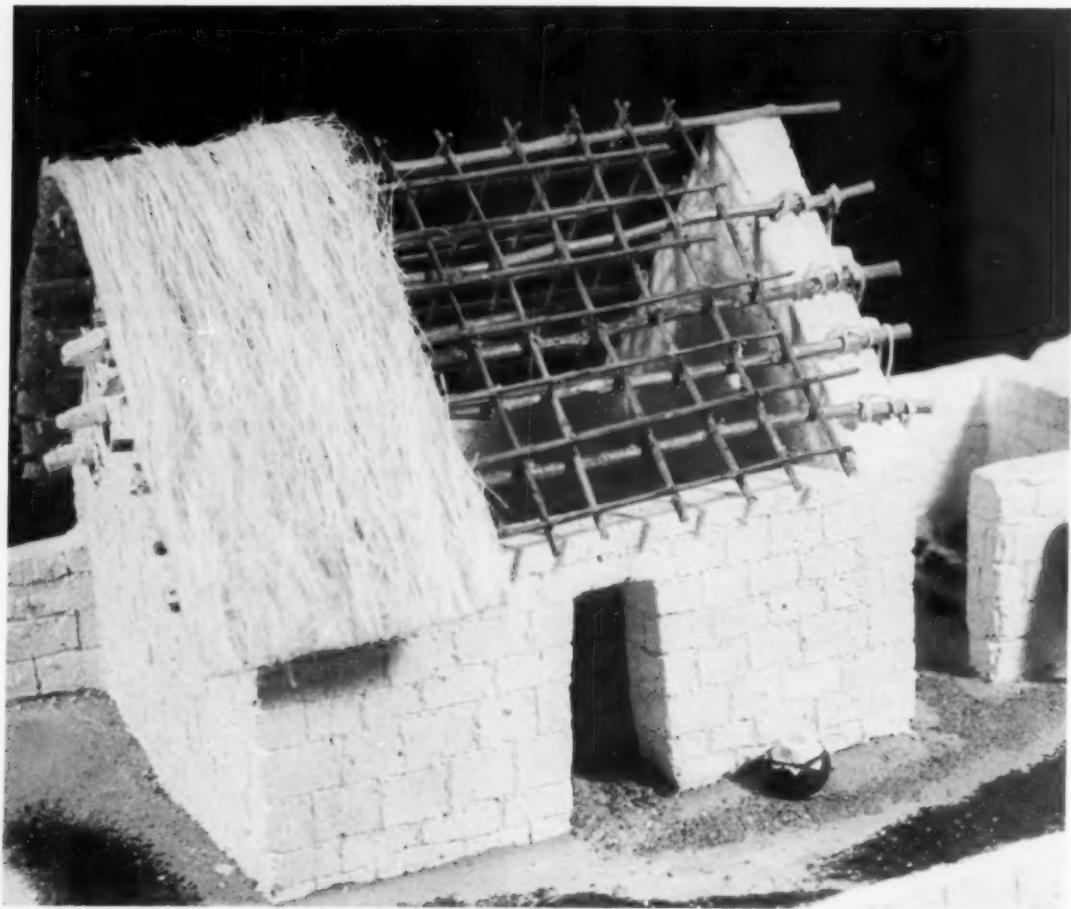
Shallow Japanese pit dwellings now called "Tateana." Tateana sites were roughly oval in plan and about seventeen feet long. The earth floor was two to three feet below ground level and in the middle of the floor an open hearth was dug or marked off with small stones. Rafters springing from the ground outside the pit rested on beams supported on four central posts. The ridge-pole and end rafters were made to extend beyond the sun-structure, giving these dwellings a sculptural quality which persists in Japanese architecture today



The earliest cliff dwellers in the dry, sunny districts bordering Arizona and New Mexico built rubble stone walls to enclose the interior of small weathered-worn caves. The enclosures, often extended to several rooms, backed against the cliff. The kiva, apparently a ceremonial survival from the past, was dug in the silt of the floor in front of the dwellings



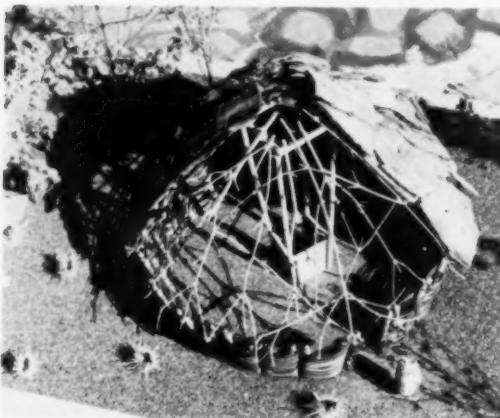
The village plan of the Hidatsa Indians in the western Missouri River valley was circular and open in the center with three to five rows of lodges facing the center. The structures, built by women, were the result of a calculated adjustment of parts aided by a minimum of notches and offsets. No pegs or ties were used. A final covering of sod gave these dwellings the appearance of a mound of earth and the name of "earth lodge"

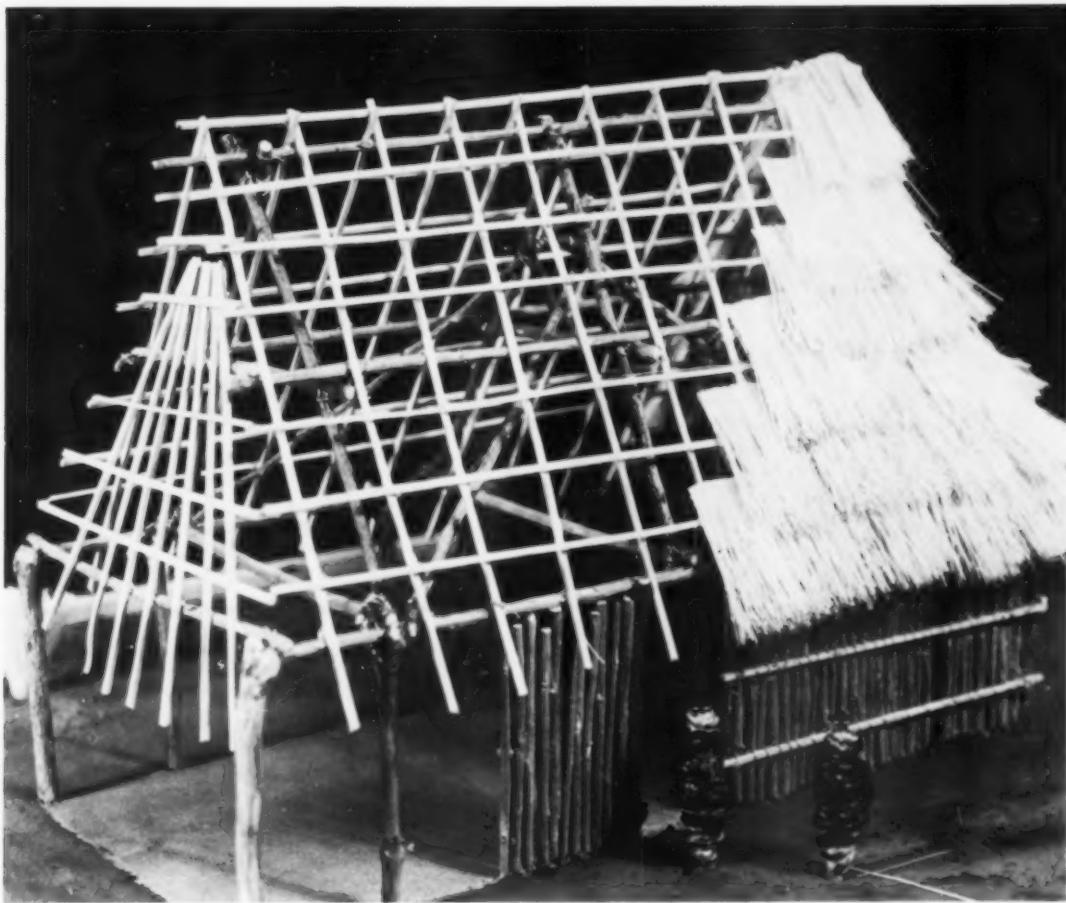


The dwellings of the Incas before the European invasion of the South American continent were of a simplicity and elegance that has seldom been equaled. Very little timber was used. Walls ranged from rough rubble to cut ashlar, and the fitting of finished stones without the use of mortar remains a marvel of native ingenuity.

From about 500 AD to 900 AD Adena Indians inhabited what is now the states of Ohio, Kentucky, Indiana, West Virginia and Pennsylvania. Houses were round and twenty-five to thirty feet in diameter with walls of sapling poles placed in the ground in pairs, slanted outward and interwoven with willow switches. Wooden posts supported the roof which was covered with bark

The cliff dwellings of the Mesa Verde district, occupied and abandoned by a Pueblo people previous to the first exploration of North America by Europeans. These structures were mostly backed against the cliff face, but occasionally terraces and even "streets" occurred, as well as buildings of more than one floor. Doors were located high above the floor and apparently reached by ladders





The modern Maya in the Mexican province of Campeche constructs his house on a system of imbedded posts and crossbeams which support a series of braced "A" frames carrying a ridge-pole. Rafters and purlins complete the structure and carry a roofing of thatch

Consistency

Custom is in fact a most persistent stimulus to consistent development of building form, and this may be simply verified by observing the obstinacy with which irrelevant details, such as classical mouldings, will reappear among houses of the present day. In primitive societies, custom is a difficult gauntlet for any innovation to pass, and in certain instances, custom will carry a building type not only through many centuries of time, but through a considerable range of physical conditions as well.

The pit house of the pre-Pueblo culture, as unearthed through archeological studies, apparently descends with little variations through a span of perhaps a thousand years to appear almost unchanged in the ceremonial kiva of the cliff-dwellers of the sixteenth century. The portable shelter of the nomadic Lapps mentioned previously distinctly resembles the tepee of the American Indian, and, since there is no geographic connection in the

development of these two dwelling types, this resemblance undoubtedly springs from the habitual need for mobility which is common to the buffalo hunter and the reindeer herder.

Tradition

The importance of custom in architectural development is also emphasized by the traditional aspect which the building of a house inevitably assumes. Ceremony tends to perpetuate certain forms. The extended rafters and ridge pole weights which are presently an accepted component of Japanese shrines presumably had their origin in the Neolithic pit dwellings excavated and reconstructed in the earliest parts of the Japanese Islands. In Samoa, the profession of the carpenter-house builder is carefully taught and jealously reserved. The resulting building forms are regarded among the people as almost sacrosanct. ◀

(Part II will appear in November)



The Young Adventurers

by Edgar I. Williams, FAIA

An article directed to the young architect—and the young-at-heart architect, in which Mr Williams asks some pointed questions and makes some wise observations on the architect and his profession in general

► A trite phrase used by businessmen and public officials in starting a letter intended to put the receiver on the track would go something like this—"Reference is made to my letter of (such and such a date), in which I stated, etc, etc . . ." Using the same stuffy technique, I refer the reader to my article in the July 1959 issue of the *AIA Journal* entitled, "The Old Timers." This article is a sequel. It is for young architects.

Architecture is a complex and baffling subject. Anyone who is not aware of the violent changes in architectural design and construction in the last half-century has been asleep. Those who care nothing about it, who do not thrill to the exciting challenge of its meaning may be excused right here. The world has come out of a half-century of violence with jaded taste, plenty of energy and almost a total disrespect for the past. In architecture it has to be a courageous person indeed who resists the pressure of the times and, paradoxically, a weak one who follows.

Are there positive values by which one can judge whether or not one architecture is better than another? If so, what are they? Over a wide span of years it has been my good fortune to talk with many able, even famous architects and artists. When I read of some startling new, bright idea, too often a little bell seems to start ringing and a voice seems to say, "Haven't I heard that before?"

For example, in 1915 the Belgian architect

Victor Horta came to the United States to lecture. He was a prominent controversial modernist dedicated to promulgating a gospel which called for the destruction of academic concepts then in vogue. He wanted a new look at architecture and the teaching of architecture with its related arts. He proposed eliminating any distinction between what were then called the minor and the major arts. It was, in his opinion, as difficult to design a chair as a skyscraper. He was against the teaching of the Orders of Architecture to a beginner, for, as he said, there were many steps to be taken before one could appreciate the qualities and meaning of any of the Orders. And besides, they were representative of past civilizations and had no place in a modern and changing world.

It was indeed a changing world in 1915 just at the beginning of World War Number One. Many open-ended questions were plaguing the world. Oswald Spengler's "Decline of the West" was fresh off the press and LeCorbusier's "Vers une Architecture" was in the works. Frank Lloyd Wright's Kahn Lectures at Princeton on "Modern Architecture" came fifteen years later, but his work and his preaching were, like those of Corbusier, well on the way to maturity in the very early nineteen hundreds.

Since I was interested in the teaching of architecture, if one could ever call the process of introduction to the subject in the schools "teaching," I asked Horta how he went about it for he was, in fact, a well-known lecturer and teacher himself. He said it would take about four hours to explain so I asked him to dinner and he kept to the schedule. There was throughout his replies in answer to my questions a sort of *leit-motif*. It was the need for everlasting inquisitiveness, observation and self-reliance. Also there was the canny advice to schools to catch the students young before bad ideas could form.

At one of the earliest classes for his young students Horta would come forth with a handful of green peas. Having passed them around he would ask a student to describe it. To emphasize his point he would take the typical student to task for calling it a "little green ball" and finally draw out of him or her the fact that in no way was it round—that is, circular. Its outline varied from every angle. From one point of view it presented balancing curves giving a somewhat oval shape; from another, roughly a spiral starting and ending at a depression from which the first shoots would come. As for color, it was generally green but—look again—there were many shades.

It was not Horta's idea that such a lesson was college entrance grade but it illustrated a point which he stressed over and over again—the need

to observe—"de l'observation, de l'observation, de l'observation." Horta must have been a good teacher. Although his work could be classed as "art nouveau," his awareness of the times lead him into early studies for housing and concern for the welfare of the masses. Like some of the early housing in Italy before the first world war a project would include not only apartments but a canteen, a meeting hall and other simple areas for play and relaxation; a total job.

This brings to mind a large gathering of architects, politicians, social workers and public officials in New York when the New York Housing Authority came into being. There were laudatory speeches and expressions of great satisfaction in that the city had succeeded in organizing for so worthy a humanitarian effort. After all, many European countries had accepted the challenge, and cities like Stockholm and Vienna had well-functioning housing authorities and many fine projects had been completed.

One of the speakers called upon was Sir Raymond Unwin who was a visiting professor at the Columbia School of Architecture. He was a pioneer with years of experience in town planning and housing, famous the world over; a man who spoke gently and wisely.

The purpose of housing, in Sir Raymond's opinion, was to make possible the holding of the family together so that individuals worthy of contributing to a democratic society would result. It was important to bear in mind in planning that if possible, the lady of the house could get a glimpse of the sunrise or the sunset while she was washing the dishes." And without drama he expressed a hope born, I suspect, of fear. He said, "I know the genius of you Americans for organization and putting things through, but I cannot escape from giving a warning never to forget that our objective is housing people, not warehousing them."

Ragnar Ostberg, Architect of the Town Hall in Stockholm, was against an international style of architecture. He was, on the contrary, intensely national, believing, as he expressed himself, that the best architecture is of the people and soil of a country. When he spoke to a National Convention of The American Institute of Architects from whom he received the Gold Medal in 1934, he cautioned American architects against changing fads. It is our tendency to "pluck the apple too green, take a bite or two, throw it away and pick up another." We are, I fear, still at it.

Contrast this point of view with that of one who takes the entirely opposite. LeCorbusier, who perhaps more than any one else has championed the international style, has stated his conviction that the "Prix de Rome" is the cancer of

French architecture. This statement could have more than one meaning, but the conclusion is inescapable that study of the past with the prospect of esthetic continuity is calamitous.

What has this to do with the young architect and his problems? It could be that such examples of architectural thinking might serve to focus attention on the path it is his turn to continue. It could indicate the concern men of character always have had for their profession and its problems.

Perhaps the most compelling motive of our generation is to turn our backs upon the past. And in the zest for change there is always the strident cry for freedom. Yet how uniform is the aspect of the new and free, and how difficult for an individual to escape from the impelling force of the times.

We should all, young and old, try to come to grips with what I like to call basic personal problems. What within me is a conviction? Do I like the peaceful and quiet? Do I like revolution? Is individuality my aim or should I try to represent the masses? Should I help to destroy what has gone before in order to build anew, or should I try to distill from the past the essence of what is my truth and build upon it? Why the clamor for violent change anyway? Should I follow a particular master and help build a new tradition along the lines of his teachings or should I try to evaluate his thinking but reserve judgment to myself?

In today's world of architecture, or building as some wish to call it, a student starts with a theoretical education, not by learning to apply the tools of service—an axe, hammer or screwdriver. There is no revelation in this remark, for we have followed this path in America for over seventy years. This approach to architecture removes one immediately from the tactile facts of reality.

A young student may choose or fall into the hands of a master or perhaps a system which attempts to bring from within him responsibility for his own judgment. He may choose or fall into the hands of a master who will attempt to mold the student into a disciple of his own conviction. In the former case his education would possibly follow the pattern of traditional English education where responsibility to attend classes, for example, does not exist—or in the latter case he would follow a rigidly patterned discipline of assignments and hours and hold to it by police methods. This is not a critique of educational systems, but it does attempt to bring the young architect into the realm of debate on the subject.

The objectives of architectural education a generation ago put design at the top with en-

couragement for the monumental as its aim. The wonders of the past were set forth as examples for inspiration. Those who finished their few scholastic years went out into a world of relative peaceful agreement on what was good architecture.

The objectives of architectural education today—I am referring to the few years of scholastic education, of course—are broader. The student is made aware to a greater degree of the practical facets of his profession even so far as acquaintance with the money structure that underlies most commercial architectural projects. He is given a glimpse of the relation of architecture to society. And on the way the past is removed from his sight. It is perhaps too early to judge the results of this contrast in point of view, but Park Avenue in New York City offers an interesting example. Is the new Park Avenue architecturally better than the old?

Architecture has, in the minds of some, been turned into a battlefield of ideas, not a pasture for the development of esthetic enterprise. The tumult is not so loud as it was twenty years ago but "eclecticism" is still a dirty word and can be brought forth as heavy ammunition in a skirmish. And we still hear the war cry, "The battle of modern architecture has been won." How absurd.

The young architect of a generation ago started teething on the Orders of Architecture; now he is given a stronger diet; he might start on a town or city plan. Where should the accent be placed in our day and age? One concept assumes as a premise that architectural forms which reflect an historic past are important since they connote a continuous but changing culture. Technology and science should be used as tools not to reproduce dead forms, but as means to achieve an historic destiny which emanates from the locale, the tradition and the soul of a people.

Another concept assumes that since this is an industrial age we should accept technology with its scientific research and mathematical conclusions as guides and seek a perfection of technique out of which a new architecture will grow. Whether the example of leadership comes from Germany, Brazil, Mexico, Japan, or from our own country seems in the latter concept to be of no special consequence.

So, my young architectural adventurers, it is too early to measure the results of your thinking and practice as it has been possible to judge that of the old timers, but the world is in your hands. And what an exciting world it is. With the utmost admiration for the energy and zeal which you have—and we need above all things intelligent zealots—may you be worthy of the great promise you are already demonstrating. ◀



► When Fro Rainey and his staff asked my wife and me to go to Tikal and make an architectural survey of the Acropolis, they didn't specify that we work solid from six AM to nine PM like regular archeologists, ethnologists, anthropologists, grave diggers and sherd polishers.

So I found some spare time on Saturday afternoons and Sundays to doodle.

Here are a few drawings of what goes on in and around and about the great archeologists' Paradise in the Peten.

You too can be an archeologist or even an interested spectator, bird, flora and fauna fancier, herpatologist, botanist, camera fiend or just plain snooper.

The plane comes in from Guatemala City on Monday, Wednesday, Friday and Sunday, and you can stay over as long as you behave like a tourist. Take along some aralen, entero vioforno, bird-watching glasses, cameras and film, whiskey against the cold nights.

The whole rain forest is endlessly fascinating and you may acquire a sunburn, pick wild orchids, spot a quetzal or at least a toucan, watch the monkeys and try and figure out what the stelae are saying.

Don't feed or annoy the archeologists, who are deep, serious M.A.'s and Ph.D.'s developing a frown trying to figure out what made a bunch of midget Indians act civilized or maybe better. It's all still a wide open problem lacking a wordy solution and if you can learn the Morse code you can date a monument as quickly as the "beards." So come, oh come, to Tikal and take home a genuine old obsidian carving tool recently faked in Guatemala City. But keep your hands off the real museum objects. They search baggage at the border. Except maybe you can sneak out an old bone, if it doesn't crumble.—ALFRED BENDINER

An Archeologist's Sketchbook

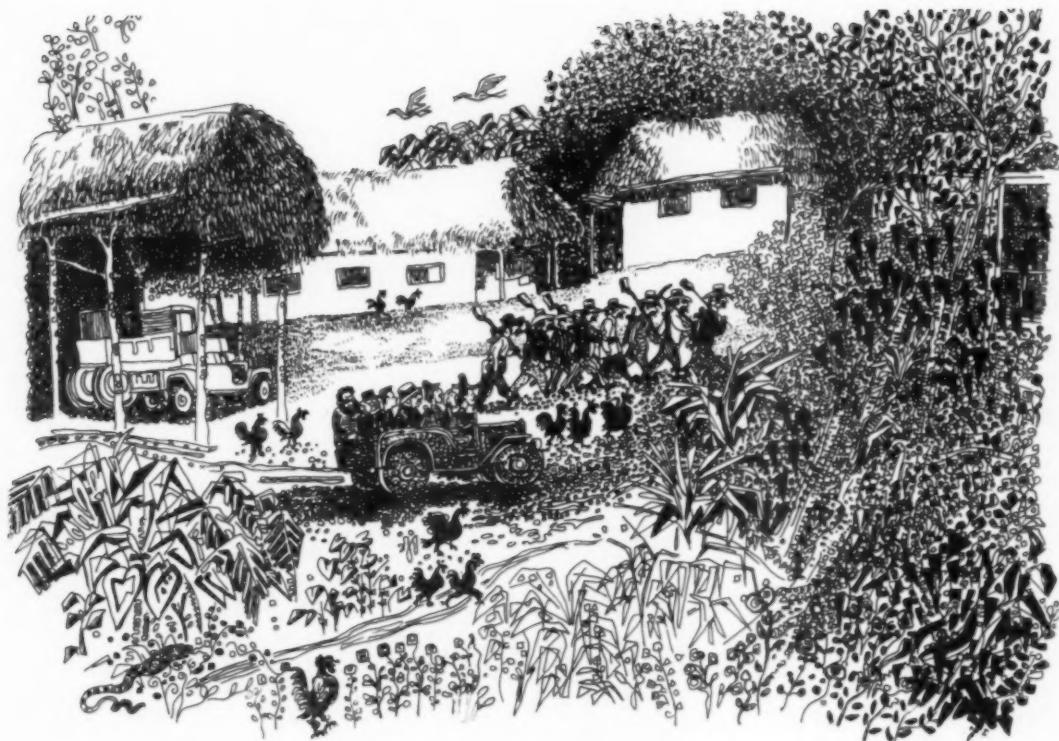
by Alfred Bendiner, FAIA

As we ascended and descended the forty feet of Temple I four times daily, loaded with a drafting room of gear, and perspiring in the burning sun, I could hear just everybody at home saying, "Lucky you. And wasn't it all the greatest!"



Rudy, our personal stake pounder and rod man, takes his leave of home and family to go to his daily task

Sherds are the backbone of archeology, next of course to the real McCoy bones . . . For every skeleton there are ten thousand busted sherds (or is it shards?); they're hell to match up but when they do join, a whole civilization unfolds . . . all add up to Grandmama Maya cooking goulash or patting frijoles way back in five-o-five A.D.



Chicleros with machetes and a jeep load of archeologists going to work at 7:00 AM

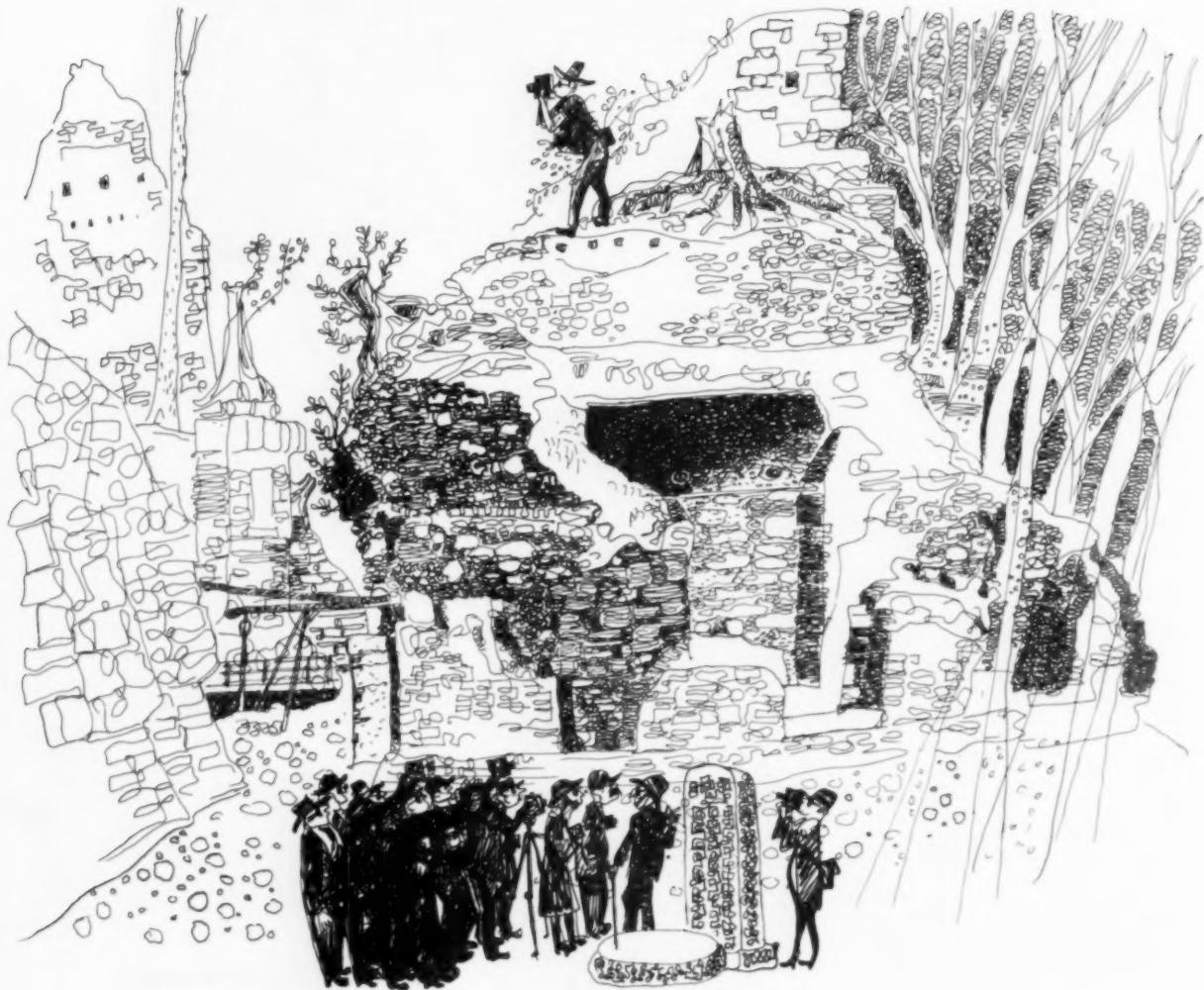


These are the surveyors going out to work in the jungle, each with four husky chicleros to carry the gear and do the work



The greatest invention of mankind to aid the field man is the transit. It is a seeingeye which can look straight ahead for a mile and up and down three hundred and sixty degrees at "true north"—if you can master the delicate twists and turns

No true scholar archeologist would dare name an old wreck of a monument "The shrine of Nedjima, the starry-eyed virgin of November twelfth Long Count." They just number them; so, here is 20 with 26 beyond. It's not a very clear drawing but then neither are the ruins





Home, sweet home



Six-o-five and the morning routine



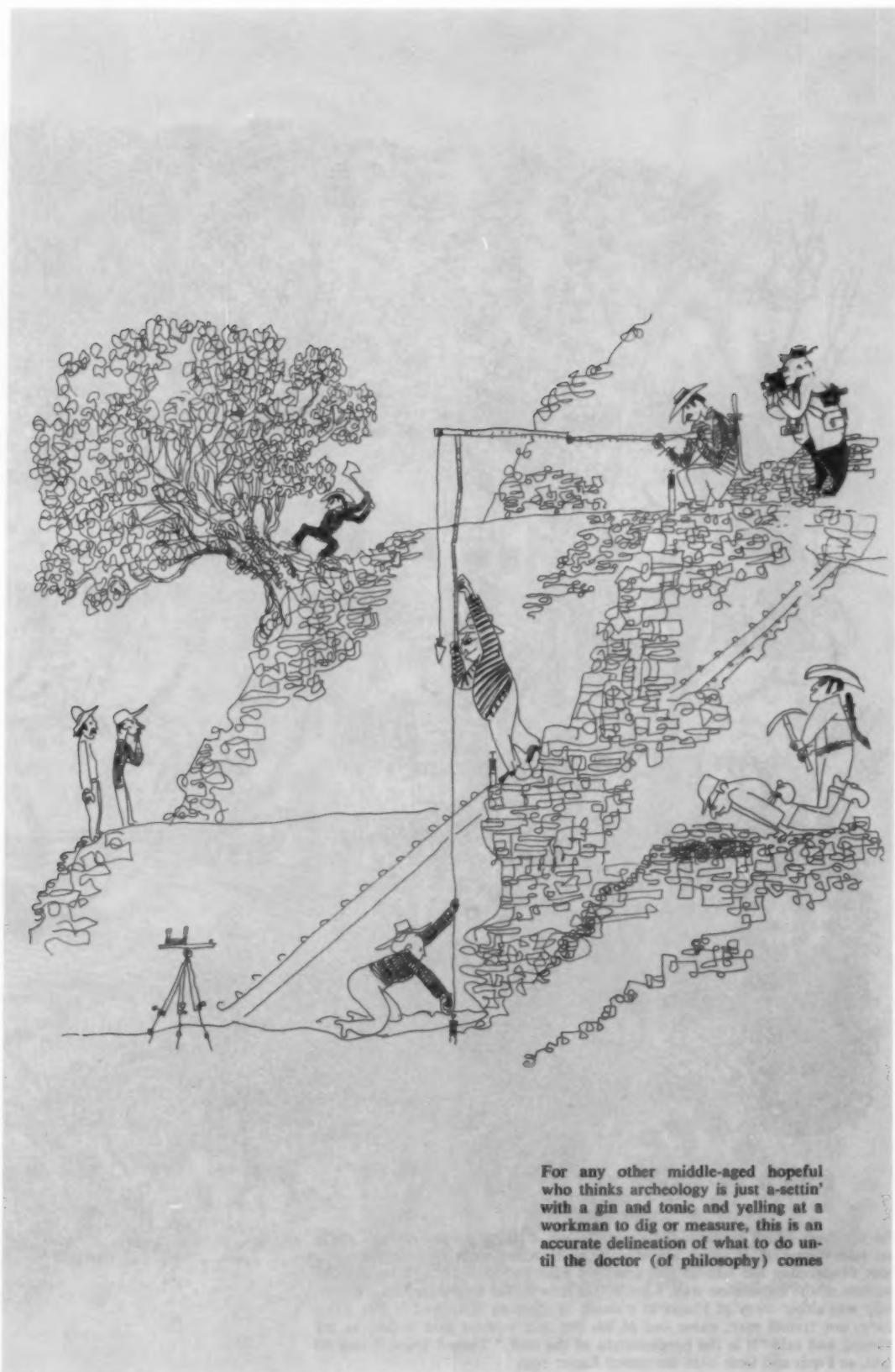
Here is a fine pattern of chicleros knocking down an ancient wall. It is only about a hundred and ten in the sun but these boys are dressed buttoned up solid and oozing



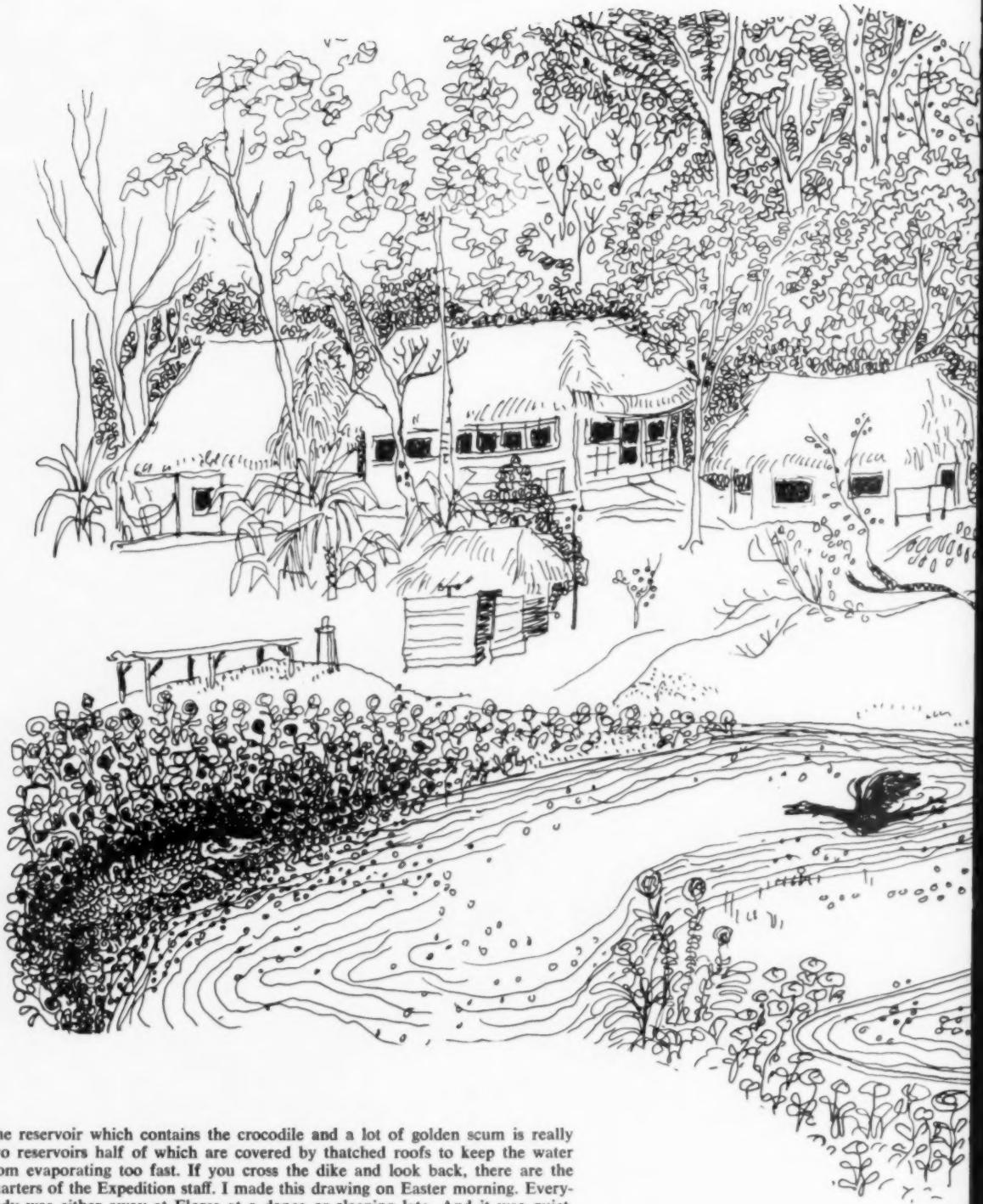
Adam and Eve never had it so good, and all screened too



"Chicleros" are men-of-all-work and originally lived in the forests cutting the bark of the trees to get chicle to make chewing gum and also, on the side, they located archeological sites. Now the American scientists have discovered a plastic for making chewing gum, so that chicleros aren't chicleros any more. No. No. They are diggers at archeological sites and work an eight hour day with time and a half for overtime and double on Saturdays and Sundays



For any other middle-aged hopeful
who thinks archeology is just a-settin'
with a gin and tonic and yelling at a
workman to dig or measure, this is an
accurate delineation of what to do until
the doctor (of philosophy) comes



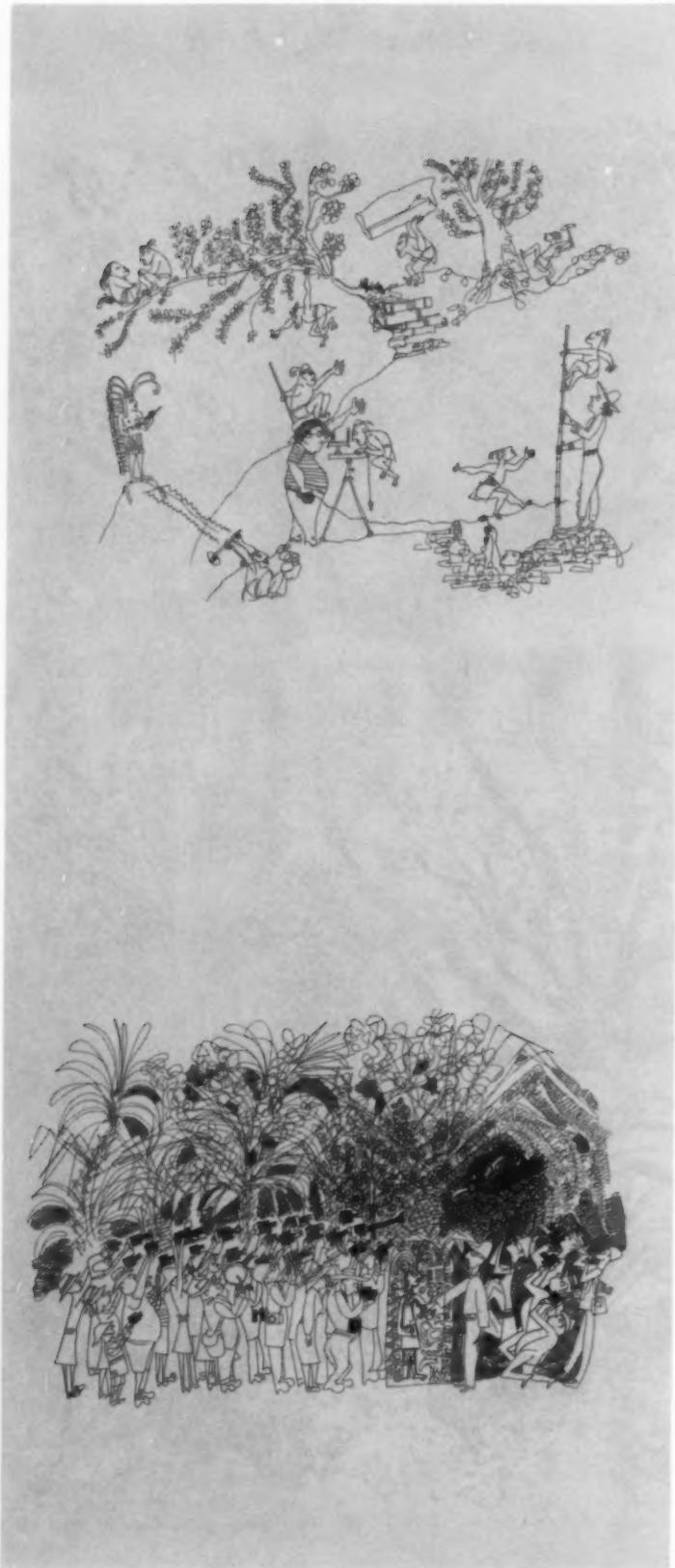
The reservoir which contains the crocodile and a lot of golden scum is really two reservoirs half of which are covered by thatched roofs to keep the water from evaporating too fast. If you cross the dike and look back, there are the quarters of the Expedition staff. I made this drawing on Easter morning. Everybody was either away at Flores at a dance or sleeping late. And it was quiet. Rudy, our transit man, came out of his hut and yawned and looked at my drawing and said "It is the headquarters of the staff." Then I knew it was all right, so I quit and went back for tinned Easter eggs



OCTOBER 1961

Bird watching tourists

After a couple months it gets you, like a good jungle should. The little people fog your scopes and the tapes stretch. And Betty says plaintively, "It's only a joke, Al, a poor, tired, worn, little joke"





Artist at work on reconstruction drawing of sculptured stone while wife takes detailed measurements to satisfy the director's demands

Dom Pedro, the Indian pick man, has just hit nothing . . . and opened a big hole doing it, which turned out to be a richly stocked tomb of an important personage—the highlight of the season!



It used to be traditional that when you uncovered a tomb of some ancient, the gods would drop you dead in your tracks or curse you so hard that your arm would wither or something equally awful and serious would happen. But, nowadays, you couldn't possibly collapse in a heap without falling over six tourists, a visiting scientist and his wife, two photographers from *Life* and all the members of your staff who are waiting for the "big moment." This is a true picture of the discovery of Stela X



Temple I is the pin-up of Tikal and is being restored—gradually. It is high and wide and handsome and is the cynosure of all eyes and cameras. On Saturday nights, the boys climb up and put an FM phonograph in the upper temple and the place resounds to Bach, Beethoven and Brahms

The Struggle for Redevelopment

by Fred Smith

► It is no news, of course, that virtually all of our 140 metropolitan areas appear to have more problems than assets. Many of them simply can't continue to drift along, picking up new problems, and slipping closer and closer to insolvency; but the difficulties inherent in their rehabilitation are many and complex and confusing. This should bring a measure of perspective to the good people of Boston, who are living through the most off-and-on urban redevelopment program in history. They can be assured, however, that much of this confusion is inevitable in any struggle where the stakes are so high and emotions so deep; and they can be sure that, in the end, under the wise leadership of Mayor Collins and with the continued cooperation of Governor Volpe and the Legislature, the redevelopment program will be on for good. But it won't be easy.

It isn't easy anywhere. Today's big city, especially in the East, is running down, mostly worn out, and fundamentally is an uneconomic structure that has lost much of its original function and can't quite settle on what is to be its future significance. Most often, it suffers from what, in business, is known as absentee ownership: The people who should be helping to develop and run the city don't live there — they live in the suburbs, commute to work, and concern themselves with their own suburban governmental problems if with anything at all. The running of the city is left to a staff of people who are sometimes called upon for miracles, but often have the status of hirelings and are paid their salaries with the greatest misgivings. Often as not, they have little real access to the brains or organizational talents that run the city's businesses, or to local investment capital which is carefully placed somewhere else. Should the government leadership go for support "to the people," it finds a handful of the very rich, who are beyond being

Mr Smith, Vice President of The Prudential Insurance Company, says people are attracted to the city by its sights and sounds and its discomforts, and yet American cities must have a redevelopment program. Here's an article with an urban design explosion in almost every sentence, and every sentence meat for the architect

deeply interested, and a multitude of the very poor, who are too involved with their own situations to be much help in finding solutions for community problems. The active, constructive-minded middle class, the traditional group that is accustomed to getting things done, has flown the coop. Nearly three-quarters of all big city executives live elsewhere, according to a *Harvard Business Review* survey, and the quarter that lives in the city are mostly too young to have any influence or too old to care.

But sometimes a city does decide to rehabilitate itself, and finds enough community support to move forward with a program. Too often, then, it settles for simply tearing everything down and rebuilding with poorly conceived complexes that may or may not solve a social or business problem, but theoretically should serve an economic purpose. It sometimes substitutes a sort of urban theatrical performance for a search for urban purpose. In theory, this way brings in more tax receipts and solvency, and that's all that matters. But is it?

There are several well-organized, well-intentioned and generally effective organized efforts to reclaim our cities. Some concentrate on the rehabilitation of neighborhoods; some on meeting the social problems arising out of too many people with too little money and too few roots — in too little space; some are oriented toward expediting multiple housing — low-cost housing for those

Presented originally as a speech before the Sixty-sixth Anniversary Dinner of the Morgan Memorial in Boston

who can't afford standard rents; middle-income housing in the hope that the middle class can be lured back to the city; and more recently, comfortable and practical housing for the aging. There are dozens of these splinter groups, each dedicated to some small fragment of the total problem. All have one commendable thing in common: They are trying to make a bad situation better and easier to live with. But all of them are treating symptoms; none of them, as far as I know, concerns itself with the basic disease, and what to do about it. Perhaps there is good reason for this: Nobody quite knows what the disease is; what really is happening — whether the city is an anachronism that can't, in the end, be saved from the evils and weaknesses it generates within itself, or whether it really serves a vital function and can have a new destiny in what has been propagandized so widely as the New Frontier.

If we could diagnose the fundamental problem, then perhaps we might make some long-range plans for getting at the root of the difficulty even while we are patching up the weak spots.

It has been suggested that the real difficulty may lie in the fact that the city was originally a necessary instrumentality that was developed and evolved to serve specific needs that no longer exist.

Originally, the city provided mutual protection: There was security in numbers, and isolation could be fatal. The city grew largely as a result of the difficulties of transportation: The business of living and the business of business had to be transacted within a short reach, and our developing economic system tended to concentrate into a restricted area both supply and demand, or to put it simply, the consumer and his sources. The city soon became a cluster of activity. Business grew into industry; employment became available, and the need for workers was filled from the farms, from the outlying areas and from abroad. The city grew larger and larger, increasingly populated with people who had left their roots elsewhere; people who, at least in the first generation, were more boarders than believers in the place they called home. Labor pools came into existence, often a shifting mass of unoriented and largely unskilled workers. This army of workers was a magnet that attracted more business, more industry, and brought more expansion; and until relatively recent times, this evolution moved relentlessly forward.

Today, we don't need the city for *protection*; to get protection from the kind of threat that exists these days, we need dispersion, not congestion. Certainly *transportation* is no longer a deterrent to our social and economic lives — except in and around the cities themselves, where transportation is a major problem. The concentrated *labor pools*

are now less than an unqualified economic asset: Many industries with large labor requirements have decentralized to avoid drawing too heavily upon any single labor pool; and besides, the economic advantage in this mechanical age lies more often in dependability and skills than in numbers. This is one reason that New England, with its generally more highly skilled workers, has, we believe, a leg up on the future.

So, in a general way, it can be argued that so many of the needs which produced the typical American metropolis no longer exist, that the city itself is an anachronism.

But the cities remain.

This could be because the city for other, and perhaps subjective reasons, is an essential part of our civilization. It may be that people like living in close quarters.

The Solvent City

But this opens up another line of inquiry. If people want cities, and cities are now uneconomical, do we make them solvent by replacing, with whiter cement and curtain-walls and efficient design, the very structures that have grown old and costly? Are we ahead of the game when we bring together all of the available federal and state and local pressures to eliminate present slums, only to replace them with massive housing projects which in another generation will become even more densely populated slums that will again need to be destroyed and replaced?

Do we look at the financial records of the city and decide that the chief, if not the whole objective, is solvency of the core area; and then set about plowing under all the older commercial buildings, and replacing them with new, multi-story projects that can collect higher rents, and provide more taxes per square foot of real estate? Do the city fathers simply set a course that will lead to standardized development complexes that may prove profitable — but will make Detroit and Philadelphia and Pittsburgh and Boston interchangeable and virtually indistinguishable? Seventeen cities of over a half-million people are currently spending over \$670 millions in federal funds on some 134 projects — and there are rumors that they all look alike. There will be at least \$22 billions spent on urban renewal during the sixties, and we can only hope that we don't wind up with one great uniform megalopolis so standardized and characterless that we won't want to live in it.

And do we decide, as so many before us have decided, that, as part of our rehabilitation, we need new access highways — which of course we do — and then head directly for the open lands, the park lands, the recreation areas and the his-

toric sites, which, since they are already in state or local ownership, provide highway space without costly court suits or loss of ratables? If solvency alone is our objective, then the answer may be yes, and perhaps in that case we should do away not only with parks, but with the statues in the parks—the historical figures of those who carved out our civilization for us; instead, perhaps we should reserve a space ten feet square in every major development and there mount on a marble pedestal the bulldozer that has come to symbolize this great new era; the bulldozer that buries our traditions and, if we do not discriminate better, may reduce our future as well as our past to rubble.

Slowly it is dawning on people, I think, that when something must go, it might be better to lose a colorless ratable than a colorful tradition; that it may be more profitable in the long run to salvage a piece of our lives, a ballast for our civilization, than to reduce to the absolute minimum the size of a bond issue.

These are the considerations that make the redevelopment and revitalization of a metropolitan area the monumental struggle that it is. And of all the conflicts that exist in redevelopment, those in Boston are the sharpest and require the deepest soul-searching.

No other city, it is said, has quite so difficult a financial problem.

No other city needs new tax ratables so badly.

In no other city does the prospect of rehabilitation promise so much.

Yet, no city in the United States, has so great a tradition which the bulldozer—and the bulldozer mentality—can eradicate so completely with one sweeping gesture.

In no other city—understandably—is the public so wary of the wonderful new architectural wave of the future that rolls out, in great undulations of functionalism, and purports to wash fiscal virtue into city hall. I am certainly not one to undersell fiscal virtue. Cities must be made to pay for themselves or they can't continue to exist. But cities are for people, they are not primarily for bookkeeping entries.

What is more important, the very solvency they seek may escape the city fathers if redevelopment is designed for solvency alone. People get bored with too many modern buildings, stripped and stark and functional. They stay home when they might be window shopping, and tourists go elsewhere, and the city could be worse off than before. Experience has shown in city after city that the big standardized complexes that developers dream up because they represent advanced design, and demonstrate functionalism, and have a cost-to-cubic-content ratio to delight an invest-

ment banker, fail to have any particular magnetism for people. The workers in the glamorous buildings on Park Avenue in New York, a pleasant, roomy street with plenty of elbow space, an almost classical example of what the modern redevelopment program aims for—these working people, when they come out of their buildings, head straight for Madison or Third Avenue.

Park Avenue is clean and slick and uninteresting. It is wide and open and has trees down the middle and is a great relief, only nobody seems really to think so. Third and Madison Avenues are cluttered with stores of all sorts, some in disrepair and some with the world's finest selection of display windows. They are crowded. They have all the evils that the modern redevelopment experts try to avoid. But that's where the people go, and that's where you will find the successful retail stores. That is where the wealth is generated to pay taxes.

Sights, Sounds, Discomforts

The fact is that people appreciate the occasional open spaces in the downtown area, but they are drawn by the sights and the sounds and discomforts of the city. They are not fascinated by the prospect of municipal solvency. Solvency is something we must achieve by catering to people, not by ignoring their interests.

There is every indication that cities will continue to grow until virtually the entire population is urbanized. Whether this is advantageous or not may depend upon whether the people are attracted to the city, or whether the city simply inundates its environment. Cities could grow by popular consent; people could be attracted to them for several reasons: Because of some sort of an emotional urge for collective security; because of the widespread facilities that the city affords; because better living quarters are provided; and because with the consent of the people, the outlying suburban areas may finally become indistinguishable from the city and even become part of one amalgamated political unit. This last, the political and fiscal unification of the city and its suburbs, is expected in many quarters to do more toward contributing to the solvency of the cities than any other potential development. A prominent Ford Foundation study group appears to believe that such an amalgamation also will lay the foundation for a workable manpower plan that could attract badly needed talent to the field of municipal administration.

People will continue to complain about cities the way they complain about the opposite sex, but they need them.

People are fascinated and comforted by the garish signs and the store windows and the bust-

ling sidewalks, and the lonely tree along the curb struggling to stay alive. Cities set the tempo for our civilization.

Much of the heart of our nation is in the metropolis, whether we like it or not. The constant agitation, the turbulence, the public bickering and decision making, the politicing, the screaming headlines, the policeman on the beat, the corner delicatessen—these are an essential and a comforting part of America. We would be poorer without them. They are not all America: There are the open spaces, the occasional wilderness, the vast flood and power projects, the farms and ranches, factories and small towns. These, too, are America, and we can't spare any part of them without becoming an entirely new kind of people—and not necessarily a better or happier people.

In working with historic sites in the National Park Service, we have a rule of thumb: Preservation is better than restoration, and restoration is better than reconstruction. In a country that shows some signs of losing its orientation, I think we might bear this in mind as a general principle. It should be applied particularly to the redevelopment of cities with the kind of solid American flavor and historic background that Boston has.

Boston must have some considerable reconstruction for economic reasons, but this reconstruction must be seen in the proper perspective; it should be conceived and placed strategically, but it shouldn't interfere with the flavor of the city. Boston is short on really first-class commercial space that will attract outside business organizations, just as it is short on middle-income and luxury apartment facilities—but the provision of this space at the cost of eliminating the appeal of Boston's character could be useless and futile. Of all places, Boston is no strategic site for great masses of repetitive, standardized modern functional buildings, now or ever. Boston's new structures, necessary as they are, should be interesting economic islands in a sea of warm and familiar tradition. New structures should go up only when older ones cannot successfully be rehabilitated; and when it is necessary to replace an old structure that can't be rehabilitated, the redevelopers should recognize an obligation to put back a reasonable amount of interest as well as utility. But the really old structures, those that still have the smell of the Revolution about them, should stay: Some of you may know that a governmental commission has been working for some time to assess the possibility of preserving and restoring historical structures in Boston. The new Secretary of the Interior has on his desk, right now, a recommendation calling for the restoration and preservation of several downtown build-

ings, and the erection of a visitor's center, all at federal expense. Legislation is expected to be introduced in the near future. With local encouragement, it might be possible to carry the restoration further, and eventually have a small Williamsburg in downtown Boston—a tourist attraction of the first order and a timely reminder of the past.

The new complexes, when they are designed, should be carefully conceived from the bottom up—yet strangely enough, many new projects out through the country apparently have been planned from the top down.

A God's-eye View

One of the greatest hazards in the field of redevelopment is the technical genius of an architectural office to produce a three-dimensional model of a projected redevelopment complex. These glamorous, exciting creations—I've seen them in city after city—provide a God's-eye view of the completed job: The geometric pattern of the structures scattered throughout dozens of acres; the contemplated play of light and shadow on the massive surfaces and high-rise walls; the sparkling touches of color to point and counterpoint contours. But that is not the way it is going to be at all when the thing is built. People won't be above it, looking down at it; they will be down below, looking up at it—or maybe straight ahead. What appeared to be, on the model, a dramatic juxtaposition of planes and surfaces may well turn out to be a cavernous void; that interplay of light and shadow may look, from the street, like a lack of warm sunlight—cold and damp and uninteresting. What we need is a race of discriminating, two-inch-high pygmies who can be rented out to architectural offices to wander through their three-dimensional models and tell us how things look from down there. They may well observe: "Master, it may be breathtaking from up where you stand, but down here it's dull and tedious."

We haven't had any pygmies, but we have spent a lot of time in planning the walking areas of Prudential Center. It is, I think, planned for people, with a skating rink, plenty of display windows, a variety of small shops, the Convention Hall, walkways and the Ring Road, steps and pools and several levels. It should attract people, and it should result not only in the rehabilitation of the older buildings for blocks around, but should increase the effectiveness of Boston's presently planned urban redevelopment program—which, as I said in the beginning, is coming. Not easily, but surely.

And I think in years to come the old Boston and the new Boston will live and prosper together. ◀

Of
Planners
and
Primadonnas

by Sibyl Moholy-Nagy

Professor of Architecture, Pratt University

A critique of the Philadelphia Convention and a plea for the revitalization of individual creativeness and personal responsibility by an author who says what she thinks and thinks deeply before saying it

► The year 1961 has been a peculiar one for the architectural profession. When AIA President Philip Will opened the Philadelphia Convention with the statement: "Our country and our profession are in a state of serious crisis," he put into one sentence what had become evident through the preceding six months. The thinking and leading minority of architects were disturbed about their life's calling, whose scope and value in society seemed to have become questionable. To alleviate this collective uncertainty architects burst into an eruptive verbalism. In New York alone the Architectural League and the School of Architecture of Columbia University offered between them nearly fifty speakers who dissected the past and present of architecture. The leading journals dedicated an astounding amount of space to questionnaires and ideological soul-searching, and the book market produced within a few months hefty tomes, all of them analytical and oriented toward the past — on "The Master Builders," "Design in the First Machine Age," "The Architecture of America," "The City in History," and others. These multi-level flights into the most non-architectural medium, the word, had some common characteristics. They adhered strictly to the American taboo of criticism on *current* structures and architects, and, despite the subheading of Columbia's marathon, "A re-examination of the next phase in architecture," offered no constructive suggestions whatsoever about the future of the profession. The only promise of a new impetus, surmounting the invocation of yesterday's achievement and the insinuated "chaoticism" of today, came from President Will at the annual AIA meeting:

"Let this convention be known as the one where the profession of architecture in this country firmly faced its future."

It was with high hopes that the lecture-goer, weary of evasions, sat down to be led into this future by the main speakers in Philadelphia.

The extent to which a people or a profession appreciate the independent creative minds among them has been an unfailing gage of cultural niveau through the ages. The convention gathering was a splendid testimony to this axiom. The film stars and raconteurs of former years had been dropped.

The architects of America were addressed by an international roster of highest professional standing. In spite of widely varying approaches to the key theme, "Redesigning Urban America," there crystallized some common denominators, as there had been in the lectures, articles and books preceding the convention. Weaver, Holford, Zevi, Bacon, with the notable exception of Lewis Mumford, projected the architect into gigantic urban patterns, a superman with Promethean powers to re-make cities and whole countries.

"The scale upon which architects must think today surpasses anything we have ever known before." (Weaver)

"Never before has the opportunity for leadership by the architectural profession been so overwhelming and self-evident." (Will)

"Architects must be able to seize the present great opportunity to remould our cities. They should think in bigger terms." (Zevi)

"No longer can the profession regard itself as primarily serving gentlemen clients or even commercial clients. It must conceive its first responsibility to be that of serving the people as a whole." (Bacon)

Thus spoke the apostles of a new universal faith called "over-all planning," trying to proselyte the architects still dwelling in the graceless state of individual design. The first most obvious coefficient of this planning chautauqua was the lure to accept "total environment" as the architectural task of the future — "the new urban form dynamic, sizeless and continuous" (Zevi). The other less obvious denominator, a coefficient *ad silentium altum*, was the lack of any reference whatsoever to the reality, the actual facts of life, pertaining to rebuilding urban America. This reality came to life in a stage show about the achievements of Philadelphia's Urban Renewal Agency that could have taught TV a thing or two, and *should* have taught the attending architects much about "the cross-roads" at which they have arrived. That it did is most doubtful. The entertaining verve with which the renewal of William Penn's dream city unfolded on the stage and the habitual credulity, conformity and cold feet of the architectural majority make it likely that the lesson of this test case, standing for all others, was lost.

Yet in conjunction with the preceding speeches and the articles published to the main topic in the *AIA Journal*, it could have opened the eyes of the alert conventioneer to the factual, not the utopian, role he assumes when he starts "thinking in new urban patterns." These new patterns have so far consisted in slum clearance and urban renewal. City planning as "total environment" is a pipe dream and a tiresome cliché. In Philadelphia as everywhere else slums and "gray areas" were

cleared with huge federal and municipal subsidies derived from tax money. Low income families, whose relocation stories make "A Century of Shame" look idyllic, were forever barred from residential communities with minimum rentals of \$220 to \$300 for two-bedroom units. To this routed middle class it makes no difference whether the "brilliant solutions" that have replaced their homes are the indifferent glass cages of Mies van der Rohe in Chicago, Detroit, Brooklyn, Newark, the "pure prisms" of I. M. Pei consisting of five identical, totally featureless hives for Philadelphia's once indigenous and unique Society Hill, or the twenty-eight story-high store-bought "miracles" of New York's Lincoln Square Towers. (And these identifiable luxury projects are the cream of the renewal crop. The vast majority is a publicly subsidized repetition of the typical speculation blocks built by unsubsidized speculators before World War I.) As the benevolent pronouncements of politicians and entrepreneurs wafted from the loudspeaker at Philadelphia's Urban Renewal show, at least one listener wondered about the blatant contradiction between the commitment to a 20% investment return for the speculator and "the first responsibility . . . of serving the people as a whole." What were the differences between "serving commercial clients," so sternly denounced by chief planner Bacon, and yielding to these bosses whose qualifications as environment-makers of the future might range anywhere from Chevrolet dealing to racehorse breeding? Their established right to choose the architect for the renewal sector bought, assures to the respective Planning Commission an influence diminishing with the pressure of exploiting the cleared land. Zevi's demand for "international cooperation in city design, anti-bureaucratic — a timely, friendly and competent intervention from outside," sounded like a joke to anyone familiar with the economic base of urban renewal.

The architect, fascinated by the mirages of "progress in action," had better face these facts before plunging like lemmings into the subsidized sea. The specific architectural characteristics of a community have once and for all been wiped out by urban renewal. This fact is starkly evident, even in the "Planning Showcase Philadelphia," where not a single memorable architectural design has been created in the multimillion-dollar buildings of Penn Center and the new residential sectors. Not even the planners themselves tried better than establishing a purely theoretical ratio at hindsight between curtain-wall skyscrapers and "modest eighteenth century buildings." Perhaps Lewis Mumford had these unconvincing scales in mind when he said:

"To think that esthetic experience is one you can define only on the drawing board without respect

to human content is pure academism and unworthy of any architectural planner who really knows his business."

The cruder, more universal apology offered for the architectural failure of urban renewal quotes financial stringencies imposed by the ignorance and brutality of the entrepreneur. But it simply is not true that today's moneybags are less cultured and more profit-conscious than were the Florentine wool merchants, the English bankers who backed Bath, or the Junkers of Virginia. Good architecture has always been the result of *persuasion, education* and *obstinacy*. Designers of all ages have had to fight for its realization. Truly architectural design has never come into being without the aggressive spirit of its creator. Most of all, good architecture took time and for that reason did not attract quick investments. When the first architect accepted the apple of temptation from the banker he suddenly saw that there could be money in his art and he was cast from the paradise of pure self-realization. From then onward it was his fate to labor by the combined skills of his pencil and his tongue to guarantee the *architectural* return against the mortgage rate. History is full of battles between patron and designer, and every great building or town plan that has survived is a monument to fighting courage and conviction. Only with the establishment of urban renewal jobs did the architect abdicate his role as persuader, prophet and visual leader in favor of that of an "architectural adviser." With wings on his cold feet he now takes after the planner who in turn takes after the developer who in turn takes after the banker. Persuasion, education and obstinacy are not only impractical, they are airily denounced as downright asocial by the public guardians "serving the people as a whole" with unobtainable luxury spaces.

In his Philadelphia lecture Bruno Zevi unintentionally pointed out the distinctly separate roles of architect and planner. He recalled the moment in history when, for the first time in post-Roman Italy, the city of Ferrara planned town spaces independently from architectural spaces. It was then that designing and planning became two different professions. The most essential distinction is dimensional. The planner deals with plotted lots on paper and with connections between fixed points. If the architect fails or is prevented from representing human life in terms of esthetic form and beneficial space within this given plat, the planner will usurp his role, supplying a city whose "overall environment" consists of indifferent containers connected by expertly planned lines of communication. (We have Brasilia as a prime example to demonstrate this point.) The planner has been trained to think in terms of land use and density units which he deploys according to empirical con-

siderations. The objective of the architect to *contain life in selective form-space compositions* is none of his concern. It is the task of the planner to supply the collective groundwork for society. It is the destiny of the architect to protect and enhance the singularity of each citizen through the walled-in matrix against the executive pressure of the community.

Two Questions

The two questions which follow from this situation and which were neither raised nor answered by the clarion call for planning, concern firstly the leadership of the architect within urban design, differing from his present dubious position, and secondly the justification of architectural individuality in a mass "culture." A plausible answer to both points requires a reappraisal of the design process.

No amount of verbal protest against the leveling persuasion of planning or the sellout of architecture to engineering will reestablish the supremacy of design if we do not make a conscious effort to check the current trend of depreciating the creative personality. Of all the pernicious clichés to which architecture has been heir through the ages, the slur at the "primadonna architect" is the most suicidal. It used to be the prerogative of office help and workmen to hiss "Primadonna!" behind the architect's back to salve their feelings of inferiority. It is quite another thing to recoin this loan from the world of opera as an architectural criterion. This was first done by the most celebrated of the Great Makers of modern architecture, Walter Gropius, in his book, "The Scope of Total Architecture." It bristles with references such as: "The self-appointed primadonna architect," and "the egocentric primadonna architect who forces his personal fancy on the intimidated client, creating solitary monuments of individual significance." According to its author, the Bauhaus program had as its goal "the confutation of the cult of the ego." The remedy prescribed against egomaniacs "yearning for the unheard-of-stunt" was teamwork. This refuge from personal responsibility became highly popular. A recent issue of the *AIA Journal* yielded samplings such as:

"He [the individual architect] must sacrifice the role of the primadonna to that of a member of the team"

"Technocratic dogmas and primadonna sculpture"

"Primadonna machine esthetics" . . . etc.

In a recent book, "The Master Builders," Peter Blake follows the line laid down by the master. He asserts that "the mess that is man-made America was created by irresponsible exhibitionists — individualists — each trying to outshout the next,"

which is a mere paraphrasing of Gropius' "The cult of the ego has delayed the general acceptance of sound trends in modern architecture. Remnants of this mentality must be eliminated before the true spirit of the architectural revolution can take root among the people everywhere and produce a common form of expression of our time after half a century of trial and error. After a long chaotic period of *l'art pour l'art*, a new language of vision is slowly replacing such individualistic terms as taste and feeling with terms of objective validity."

It is one of the tragic ironies of twentieth century architectural history that so many revolutionary ideas, carried through to general acceptance, have resulted in the most destructive developments. Le Corbusier's machine romanticism and the Bauhaus ideal of "buildings as an assembly of prefabricated and standardized parts" have borne rich fruit in all the Levittowns and commercial parks of this continent. Mies van der Rohe's "less is more" has become the excuse for less is less. Wright's dispersion of cities is devouring the countryside with urban sprawl, and Gropius' attack on the academy for its "preoccupation with the idea of individual genius" is the root from which sprang the cult of teamwork and, in logical succession, the big architectural office and the package deal. The President of the AIA used the pages of the official *Journal* to take issue with the small architectural office and "the solitary do-it-yourself architect," extolling the leadership of the large office, the "well-rehearsed orchestra" that can deliver "the package." Taking the well-known lack of sanitary facilities of Versailles as proof of the inadequacy of individual design, the President revealed that "today's Versailles demand plumbing along with splendid façades. And today's Louis XIV will hardly turn to the one-man office to get both. Let's face it: The client has a right to the package. . . . Architecture has become a team sport."

To the recalcitrant offices, comprising 52.5% of the AIA membership, working with one to four employees, he relegated "the small client — the man who wants to extend his porch" and who "may sit on the multi-million dollar hospital building committee tomorrow."

In sharpest contrast to these quotations we do not believe that "the mess that is man-made America" was caused by irresponsible individualists but to the contrary by ready conformism with the lowest commercial standards; we believe that the paralyzing monotony and doubtful durability of modular curtain-wall structures in the business districts of our cities are the responsibility of big offices working on the factory principle from uniform blue-prints; we do not believe that "losing the game" the alternative to architecture as team sport

and as package as the AIA president asserts; and we believe most fervently that only a revitalization of *individual creativeness and personal responsibility* can save architecture from extinction and assure its influence on city planning. Technology has not added a single structural or mechanical feature to collective architecture which is not applicable to any machine installation and which is not liable to immediate obsolescence. Architectural features, hailed as "a common form of expression of our time" by the prosecutors of "the cult of the ego," originated in the imagination of solitary, unteammed geniuses, from the open floor plan of Wright's *Home Journal* house via Mies' repetitive module in the glass skyscraper project from 1920 to the pilotis of Le Corbusier's Swiss Pavilion from 1930. Creative imagination does not flourish in big offices because a man's incentives to originality are self-projection and the desire for recognition. Without these incentives to "solitary greatness," architecture will die of stagnation. Design that establishes the difference between construction and architecture depends on the crucial moment when the ineradicable residues of tradition, the sublimated needs of the present, and a vision of the ideal standards of the future must fuse on paper into a new space in a new form, marked by the architect on the surface of the earth. To face this challenge he cannot fall back on ancestor worship, hide behind "collective responsibility" or rely on technology. At that moment the architect is alone and supreme. If this isolates him from the "team" in proportion to the significance of his results, let him be a "primadonna." Without the fruit of such moments no one has the right to call himself an architect, and no client, big or small, will have a reason to seek architectural service. In wiser, more manly times, Emerson wrote:

"Hurl in the face of custom and trade and office the fact which is the upshot of all history, that there is a great responsible Thinker and Actor working wherever a man works; that a true man belongs to no other team or place but is the center of things."

In relationship to the new profession of planning, the fashionable denigration of the individual creator has had even more serious consequences. By making *accusations* of the architect's commitment "to make each commission a self-important and separate world," of aspiring to "monuments of individual significance," and of "such individualistic terms as taste and feeling," the leaders of the profession have promoted a collective mediocrity that has convinced planners and entrepreneurs that design is indeed "a minority report" as Zevi put it. The grovelling compliance of the architect with every financial compromise has made

him the whipping boy and the prestige fig leaf of urban renewal.

"A definition of our professional mission" which should have been the sum total of the Philadelphia convention must start with the willingness of the architect to fight for his personal concept of a planned community, as did Wren for London, Craig for Edinburgh, Wood for Bath, Haussmann for Paris, 'Enfant for Washington, Taut for Berlin, Stein for Radburn, Le Corbusier for Chandigarh, and dozens of others.

The architect must be strong enough and proud enough to relinquish his commission if his ideas are adulterated beyond effectiveness. It seems inevitable that the private developer will remain the key figure in urban renewal, but the extent of public subsidies would justify a law forbidding the demolition of town sectors before a complete architectural solution has been worked out. This would eliminate panic-building on cleared land and deprive the planners of their pet defense that "something had to be done." Such a law would most certainly curtail the number of renewal projects, which should not worry men who have the word *future* written in capital letters above their programs. Despite Sir William Holford's arrogant assertion that Le Corbusier had nothing to offer to the solution of our planning problems, the future of planning and architecture alike depends on understanding the profundity of Le Corbusier's simple statement:

"Architecture and urbanism are in fact one problem only and are not separate questions. They demand one solution only and this is the work of one profession only."

"The hot, seething volume" of planner Bacon's generalities about space-age and "over-all law," confronted with the architectural evidence of renewed Philadelphia, bears out Le Corbusier's demand for architectural supremacy. Urban renewal, unchecked by creative architecture, unrelieved by the drama of "primadonna design," ignores Lewis

Mumford's basic cultural requirements of "differentiation, individuality and choice."

The crossroads, defined as the mental location of the Philadelphia convention, points, as all crossroads must, in four directions. The architect of 1961 can either disappear into the well-rehearsed orchestra of the big office whose creative potential is on a par with every efficient engineering firm; he can change his name and become a planner, burying the dreary compromises of expedient renewal under an avalanche of environmental generalizations or, the architect can believe with John Dewey that "if we eliminate the personal factor from society, we are left with a lifeless mass," and set himself the task of saving this personal factor in our society. He can fight his way down the third of the crossroads, imprinting his design on the new faces of our cities, and drawing strength for this fearful battle against planning blight from the fourth road of individual creation. It has been the yield of that road which provided mankind with cultural continuity, fashioning the architectural mirror in which each age recognized its true self. There is no reason for our arrogant assumption that we are different from 3000 years of civilization and that this built image is no longer essential. To uphold and intensify it the architect must shed his credulity, his conformity and his cold feet. Down the long gallery of his ancestors he will not find a single conformist whose features are still recognizable today. The historical roll-call of architecture is only answered by rebels, non-materialists, self-believers. To reconquer this leadership means going back to the ill-paid, difficult and solitary profession of design. More than religion, science, or politics it was the genius of environmental design that raised man from the herd and made him unique. With its decay he will be pushed from the cultural plateau back into chaos and anonymity. Perhaps it is already too late and the future belongs to the collective warren technologically equipped — but there are a few who will go down fighting! ◀

A Footnote From President Will:

Months ago when I first publicly stated the thesis that the scale and complexity of contemporary architectural problems require the collaboration of many skills organized into teams, I fully expected to be misunderstood. I have not been disappointed.

I am not an admirer of bigness *per se*, nor do I underrate the small office. Offices both large and small will continue to exist in response to the technical needs of society and the temperaments of the principal architects. All are needed and will modify their organizations to fit the work they wish to do and the demands made upon them. To me, however, it is axiomatic that not even a Corbusier is qualified

to deal personally with all the problems which must be resolved if the urban environment he himself envisions is to be accomplished.

I have long admired Mrs Mohol-Nagy. Her article is vigorously written and states a point of view which I actually share. Once we straighten out our points of reference our differences will tend to disappear. I admire primadonnas. But we need more particularly to lead the teams of which I speak. True, it takes only one hand to hold a pencil, and inspired concepts are usually the creation of a single mind. Such is the responsibility of leadership. Yet I doubt that even Wren, Haussman or L'Enfant could, in splendid isolation, achieve today that which was possible in more simple times.





Litchfield, Connecticut

PHOTOGRAPHS BY MARTHA MCMILLAN ROBERTS

International Venture

by Edmund R. Purves, FAIA

► More than the average share of travel, war and living abroad can whet the appetite rather than surfeit the sensibilities. Fifteen years in Washington enjoying a never-ending parade of foreign visitors stimulates an interest in other people. It is only natural that I have long harbored a hope to attend an international architectural Congress. That hope was fulfilled when the Board requested my wife and me to journey to London to represent the AIA at the Congress of the Union Internationale des Architectes. The mandate was pursued with alacrity and enthusiasm—the latter somewhat dampened prior to our departure upon being informed that I was not to be an official delegate to the Congress, for reasons which were never quite clarified. Consequently, due to a New England conscience, a feeling of slight guilt accompanied me, for I could not officially fulfill the obligations demanded by the assignment.

However, my declassification permitted me to undertake a sentimental mission of considerable personal interest. So, with my sense of obligation happily blunted, I left others in London to sit through sessions of an Executive Committee meeting which I was subsequently informed were typical.

The day after arriving in London I took the Cornish Riviera Express from Paddington to spend two days in Cornwall. As an American boy of ten I spent happy days in England's West County, so I was grateful for the opportunity to strengthen a few physical and spiritual ties which have formed binding links between my family and a beautiful and charming China clay port.

The excursion was not altogether unarchitectural, for it centered about a proposed tangible memorial to my parents. I walked about the an-

The Institute's Consulting Director recently returned from England where he attended the Congress of the UIA in London. In this article he gives us some sharp-witted comments on the proceedings and a delightful review of his trip in general

cient town and hiked over the cliff-tops above the English Channel. I discussed the possibilities of rehabilitating a sixteenth century alms house with the descendants of the family which had originally given it to the town. I spent evenings in manor houses of great age and mellow beauty, discussing with my hosts over Scotch-and-soda suitable means or continuing the endearment of my family to a fascinating part of the world.

Upon my return to London I called the headquarters of the Congress only to be informed definitely that there was no point in my appearing on the Congress premises until Monday morning unless, of course, I wished to come down and register on Sunday. The suggestion was conveyed as a favor, so I complied and transacted the business with sufficient dispatch to enable me to get back to see the changing of the guard at Buckingham Palace, a pleasant little pageant. As we have many friends in London I could put in my time to good advantage until my presence at the Congress was more or less demanded.

An aide to the Ambassador took us to lunch in his flat and then gave me a thorough tour of our Embassy on Grosvenor Square. Having no architectural background he could offer unalloyed comment on the structure and accommodations which form architecturally the representation of the United States to the English people. Having been somewhat involved in the competition and instrumental in getting it accomplished, I have a sort of parental attitude toward the winning design. I was fond of the winning architect, Saarinen, and was shocked at his sudden passing. He was by all odds one of our best. He has done beautiful and exciting buildings with imagination and daring.

I strove to take advantage of being abroad to spend time with others than my compatriots, an attitude which I assumed was implicit in my assignment. This pursuit was most rewarding and my time was fully occupied. Although I informed my British friends of my purpose in coming to London, they were only mildly interested in the architectural Congress, and this despite the extraordinarily lavish publicity which the Congress received in the London press. They were far more interested in what opinions I might have of our administration and especially the White House incumbents.

One of my old friends is now all but the head man of the British Treasury, an economist and a genius. We dined several times with him and his brilliant and fascinating wife. The conversation was always lively and stimulating, even if I found myself, at times, perilously close to being out of my depth (I might as well admit it, I was out of my depth) in discussions on economics and British politics, subjects which are not included in the architectural curriculum.

As a paid-up registrant for the Congress, before I left America I had been furnished with the three principal papers, each written by a competent well-known expert — Henry-Russell Hitchcock of the United States, Jerzy Hryniecki of Poland, and Pier Luigi Nervi of Italy. As I journeyed to England by boat I had ample opportunity to read and digest these papers, a task which probably because of the inevitable relaxation the ocean affords, proved to be desultory and not provocative of speculation or rumination. But despite the skill and intelligence of the authors, I fear the subject lent itself too readily to a redundancy which I was to learn would characterize the deliberations of the Congress. Also, we Americans have heard it all before and I suspect so had many others.

Now the theme of the UIA Congress concerned the possible or probable industrialization of architecture, a theme which is a tacit tribute to business — big business. Just how the program-makers of the Congress expected this two-hour item to survive three days of discussion without being worked to death is a question which was exhaustively answered in the interminable oratory that ensued.

Had the Congress devoted itself to a series of technical, economic and architectural discussions on a number of the many facets of industrialization (as was suggested by a Canadian participant, alas too late) our days would have been spent to better advantage. The discourses, both written and oral, were mostly amplifications of the obvious. For when all is said and done, whether or not architecture becomes industrialized (and the import of that phrase is controversial) will come about not by virtue of the architects' manipulation of industrialization but rather through the forces of economy, of politics and of what passes as progress.

The Congress was organized and produced in superb fashion; better than anything I had seen or attended hitherto. It was a very smooth and professional operation. Maybe professional organizers in England and France have had greater experience and obviously, as in the case of the UIA, not only far more means at their disposal but the active and seemingly happy cooperation of the necessary authorities.

Pierre Vago, who in 1946 initiated the UIA in Paris and who has kept in going ever since and who, in fact, is the UIA, and the British organizing committee should share the encomiums. The hand of the expert was manifest.

Upon arrival at the headquarters of the Congress, a temporary building erected for the Congress, there was waiting not only for me but also for my wife, a portfolio containing the programs and other information which made the offerings at our own conventions seem rather mean and meager. There was no need to ask questions about anything for it was all in the portfolio — where to eat; what to see; what to do; how to pay. Consequently the number of notices and supplementary information given at the Congress sessions was but a fraction of the instructions announced at AIA gatherings — all the more remarkable as there were upwards of 2,000 architects there from all the nations.

The attendance of hundreds of people of widely different political and ideological faiths presents a problem with which we never have had to contend. I look back with envy and relish on the excellence of the operation.

I was not taken by the temporary buildings which had been erected for the Congress. One, a headquarters building, the other a structure to house the exhibits about both of which a rather fanciful and deceptive booklet had been produced. I should have been more receptive to the apt phrase of the cab-driver who, when I asked him to take me to the architectural Congress headquarters, cocked his head, winked and said, "Righto, Governor, the queer building." But even his penetrating observation did not prepare me for the odd assemblage of aluminum, pyramids, old lumber and cobble stones that had been thrown together to form the vertical elements of a really workable plan, thus casting a doubt on the old Beaux Arts dictum that a good plan will *ipso facto* produce a distinguished building. I learned later that the organizers, being woefully short of funds for the purpose, had to "make do" and deserve credit for producing under unfavorable circumstances.

Across the way there was the exhibition building, a curious and incomprehensible marriage between temporary hoarding for a construction project and the barrier of a bull ring over which toreros jump when the bull decides to take over. The exhibitions were skillfully arranged and of themselves excellent.

The Plenary Sessions

Like all international Congresses I suppose, ours opened with a plenary session — a word which has an oddly medical ring. The introduction wittily and gracefully delivered by Sir William Holford promised to set a pattern which unfortunately failed to be maintained in the welter of sententious oratory.

No conference, hospital or school is official or has status in England unless it is opened by royalty. On this occasion the status was bestowed by Mr Antony Armstrong-Jones who not only accomplished his purpose with grace and charm but who also sat gallantly through the balance of the proceedings of the plenary session. Judging from his expression he took in every word and smiled at every sally that even approached being wit. So we were distressed to read an editorial in the British paper a day or so afterwards roundly condemning one and all for permitting a commoner to represent the Crown. This editorial in a leading paper struck me at once as being nasty to him and rude to the participants in the Congress. It would seem to a simple republican American that by marriage his right to represent had been established, and to judge by other criteria he was fully equipped to carry out the honorable task. I met him several days later as I was taking an old friend through the exhibition. He appeared from around the screen, addressed my companion by nickname and asked

her what she thought of the show. We had a brief conversation. I was impressed not only with his charm but with his genuine interest in and appreciation of a good architectural exhibition. After all, as a well above average photographer in his own right, he is well qualified to pass judgment.

The Festival Hall where the plenary sessions were held is without question a marvelous machine for listening. That is about as far as it goes. Its design and decor are to my perhaps frivolous tastes depressing to the point of being hideous. The general effect is one of somber gloom and without distinction. It lacked the unique intimacy which, combined with grandeur, makes the Hall of the Masonic Memorial in San Francisco so excellent a gathering place.

As is true of many conventions the social gatherings produced enjoyment and real interest. It was at these that the objectives of mutual international understanding were more likely to be attained. If you have the patience and hardyhood you could even obtain and read a transcript of the entire proceedings. The digests are probably preferable but even those have a way of being expanded. The sum and substance of the remarks and results of the week could be reduced no doubt to an amazing minimum.

For us, the Congress was augmented by the invitations we received from old friends in London. So before going to Lancaster House for the first major reception, we stopped for an hour or so in Belgravia where the mother of our English godson had invited a few people for a drink and to talk architecture. Lancaster House, majestic and imposing, may well have been the inspiration for the Baroque of our more affluent West. It is a noble structure, its rooms being what is generally described as of noble proportion. Its grand escalier is grand as to be almost intimidating. The gathering was pleasant — one of those occasions when we really had a chance to meet and talk with our professional colleagues and their charming wives. Our hosts succeeded admirably in creating the impression that they enjoyed having us. The spirit of geniality and good will that pervaded at the Lancaster House reception was scarcely matched by any other London occasion.

With the social gatherings outdoing the working sessions in interest and media of accomplishment, it is natural that they require an apparently undue amount of space in any objective or subjective record of the Congress.

Perhaps in the memory of many, and certainly of myself, the Lord Mayor's reception at the Guildhall was the high point of the week. The affair was graced with that ceremony and color which the British employ with a competence that comes from history and devotion. The Guildhall is beautiful,

the uniforms and costumes were moving and the Lord Mayor in his robes all combined to make our evening memorable. We saw many old friends and I was touched by the number who paid court to my wife, for she has been a conscientious hostess to many foreign architects who have come to Washington.

The Working Sessions

There is really not much to say about the working sessions. The scheduled remarks in my working group, save for those of Sir Thomas Bennett, were labored. The requiring of the participants to fill out an application if they wanted to address the assemblage had a deadening effect on the sessions and, at least in my group, virtually did away with anything that smacked of lively discussion. Many of the off-the-floor remarks had evidence of preparation, even of rehearsal. That give-and-take which lends a spark to debate was absent. They were sententious pronouncements of the patent in ever-increasing sonorous and contrived terms.

European professors of architecture seemed to be able to outdo the others. There were times during their interminable pronouncements when one had to fight down an overwhelming desire to jump up and shout, "Look here, Jack, please cut out the words and say something."

I wondered if the reason that we English and Americans have always attached omniscience to anyone that addresses us in a foreign tongue is simply because we do not fully understand the language. Just as those of us who possess a modest fluency in French find a French farce hilarious when presented in that language and quite disappointing when translated into English. Our lack of command of the language stimulates our imaginations and the humor lies really in our own minds. At the Congress the instant translation conveyed through the earphones dispelled the glamor. However, my group revealed that it contained several revolutionaries, one a young British architect who said with some force and clarity that except for the social gatherings he considered the rest of the affair a total waste of his time and that he had learned absolutely nothing as much as he tried to do so. He was followed by an engineer from East Germany, a Communist, who spoke English amazingly well. He protested that he could read all these philosophies and involved statements whenever he felt like it which probably would not be often. He really had come to England to see buildings in progress, to learn their methods and techniques and to see how other architects carry on their work and to see if there were something he could carry back to East Germany which would help his own vocation. So far he felt he had been frustrated. Either officially or by nature, Communists seldom

feel obliged to observe amenities or courtesies. Therefore our friend from East Germany spoke with considerable candor and without apology.

Like all Communists, however, he could not finish without getting in a plug for his country and his political and spiritual ideology. He pitied us in the capitalist countries, for in his Communist state land is nationalized so that the city planners, architects and engineers are relieved of many of the problems that confront us poor fellows struggling to get anything planned or done in the free enterprise system. It sounded pretty plausible until one stopped to think that it is extremely doubtful if the East German engineer really has much of a voice in determining the planning of his homeland. I strongly suspect that he simply carries out the orders of his authorities and that he is nothing but a mere technician solving lesser problems under the eye and all-pervading direction of Big Brother.

After that we returned to the drone of learned language. I wondered if there were other professionals in this world who have the extraordinary capacity that architects possess to listen to hours of words and nod in acquiescence to the profundities of varying weight and content.

One Mexican did offer what to me was a rather original, if appalling, thought. He favored the industrialization of architecture, not as an evidence of progress but as a protection of the architect against the demands of a client. He spoke touchingly of the protection that industrialization would afford and how it would give a sort of insurance against the capricious demands of those who engage architectural services.

Industrialized Architect

All an architect has to say when a client demands the impossible or when a client demands something an architect does not want to do is, "Sorry, before industrialization took us over I could have done it, but things just are not made that way any more." Naturally, I never thought of industrialization in this light but I wondered if, after all, the Mexican did not have a point. The profession in our country now has insurance against liability and insurance against ailing employees, fire, theft, tornado and whatnot. So why not go a step farther and insure ourselves against the whims of clients? Incidentally, there is apparently no premium to pay for this type of insurance. It will be provided for us free by industrialization.

Of course, there were exhortations and table-pounding about architects mastering industrialization, pious pronouncements which overlook that at least in the United States the power to decide does not rest with the professional, but with money. And there is a difference between the theoretical exer-

cise of paper-stated prerogatives and the factual exercise of that determination which is based on force and power.

I found myself in a state of rebellion — I might say confused rebellion — against the threat of industrialization. This might stem from the fact that I have always been opposed to authority of any sort, especially that authority imposed by standardization, stratification and industrialization — in short, socialization.

I was aware of another and curiously disturbing phenomenon, for in all this welter of words emanating from all lands, free and Communist, the only national silence was American. A silence which I learned was momentarily broken in one of the other working groups by two compatriots. A distinguished foreign architect complained rather pointedly that there were no printed comments on the theme papers from Americans especially as we were probably in a better position to speak on industrialization than any other people. However, it may have been because the American group never met. We never organized and had no plan of action or policy, not that that would have made any particular difference unless we could have succeeded in injecting a new and exciting thought.

Little or no interest is taken in or importance attached to the international activities and responsibilities of the AIA. Instead, this currently vital field is all but forgotten save for those broadminded intelligent and self-sacrificing individuals who at great personal expense of time, energy and money have single-handedly and often without thanks or encouragement kept the AIA recognized as a potent factor in international good will and professional progress. Further, the extraordinary service the Octagon has rendered in the past twelve years in caring for and furthering our appropriate role in aiding, instructing and entertaining the never-ending stream of architects and students, singly and in groups, from other lands, has for the most part gone unnoticed and unthanked save for the immediate beneficiaries who have invariably expressed their gratitude.

Manifestly, the American delegation was handicapped by the absence of direction and encouragement.

Why The Silence?

To return for a moment to the American silence, I wondered if in part it might be due to the fact that we are so restricted in our land by building codes, laws, ordinances and shibboleths that we lack that freedom of architectural expression enjoyed by so many architects of other countries which in turn may tend to involuntarily restrict us or cause us to raise but a timid voice when we meet with our peers.

The working sessions were finally over and the three circuit troupes consisting of the chairmen, the two prepared speeches and the author of the original paper, wound up their labors. The three chairmen were splendid fellows and they conducted their sessions with grace. Our old friend Martinez of Mexico was one, an Israeli architect was the other, and the Red Chinese Yang was the third. Despite the great divergence of background and ideology, I felt all failed to vary the fare. Their own personalities and national aspirations did not seem to be injected into the gathering.

On one day our sessions were honored by the Duke of Edinburgh who visited each working group. He is attractive and exuded genuine warmth and undeniable charm. The sessions broke up and we stood about while he mingled among us engaging some in conversation. One of those so engaged was our own Sam Cooper, whom the Duke advised to leave Georgia and go to Texas as unquestionably Texans spend more money than Georgians. Happening to be standing by Sam at the moment of the Royal encounter, I felt I was included also in the genial colloquy that took place.

Extra-Curricular

As I have said, my stay in London was enlivened and cheered by the extra-curricular activities which included for my part an afternoon spent in the Diplomatic Gallery of the House of Commons. This was a particularly interesting day for one of Her Majesty's Ministers had committed a blunder and was called smartly to account by the leader of the opposition. I was fascinated by the English Parliamentary procedure and tradition. They have little in common with our Congress. But I could not help but reflect that each of us, the American Congress and the British Parliament, could take a little bit from the other to mutual advantage.

That evening we were taken to dine in the House of Commons by a member from Cornwell. From him I learned very much about the British Parliamentary procedure, British politics and party organization. After an excellent dinner, cocktails, wine and brandy (desirable but unobtainable items in the Senate dining room in Washington) we went down below into the crypt of that House, an uncommon excursion for a visitor at night.

I found out afterwards that some objection had been raised to my getting into the Diplomatic Gallery as it was necessary that the permit be given by a member of the British Cabinet. A permit was obtained by our Godson's mother. Apparently the Minister demurred. She explained that I was a very important person whereupon he is reported to have said that all visiting Americans are important.

During the session of the House I listened with admiration to the quick-witted Prime Minister McMillan who succeeded in making every questioner look a little bit out of order. I remarked upon this extraordinary talent to an English friend of mine who said, "Well, after all you have to be quick-witted to be a Prime Minister," a requisite for office which does not seem to be always enjoyed by the heads of our own state. At the moment it would appear that we have a President who can match his wits with anyone.

One evening our friend in the Treasury, who is also a Director of Covent Garden, gave us tickets to the Leningrad Ballet which was performing at a gala evening in London. Theatrical performances start rather early in London, and this one commenced at 7:30. It took a little bit of persuasion on my part to get the Garrick Club, in which fascinating institution I was favored with a temporary membership, to furnish us with a cold lobster and suitable refreshments before hurrying off to the theatre. So for several magnificent and wonderful hours we saw the classic ballet performed by the top company at its best.

Friday night there was a grand gala at the RIBA on Portland Place. We had dined before that with the English boys and the wife of one of them who had stayed with my family during the war. They are now grown men, one of them commencing a brilliant government career and the other, of all things, a managerial consultant. After an evening of pleasant conversation I was driven to Portland Place and found myself thrust into a melee of noise, music, free food and champagne. After I had seen and talked with a few people I hurried home. No criticism of the occasion at all, for the RIBA had gone all out, but I was tired. The mass gala gathering at our conventions are, if anything, a trifle more decorous than that which took place at Portland Place.

I think it would be well before giving a personal summation to insert here the official resolutions adopted by the Congress as presented by the Coordinating Committee. These were adopted without discussion or comment and presumably are the result not only of several days deliberation at the Congress, but prior study by those who have an interest in concocting resolutions. One can scarcely quarrel with those adopted by the Congress. They were introduced by J. N. Richards of Great Britain in an eloquent summation after whose delivery and rhetoric the resolutions were somewhat anticlimactical.

1 That industrialization and new technical developments have a major part to play in the future of architecture, especially in solving the housing problems of the world's growing population and its improving standards of liv-

ing, and that architects must be prepared to adapt their methods of work to this fact.

- 2 That although new techniques and materials can do much to open up new possibilities for architecture, research is needed to ensure that their use is related to the needs of different countries and climates, and specially takes note of the differences between countries highly developed industrially and those less developed.
- 3 However fully architecture accepts new techniques and materials it must be in order that architectural ends shall be served. Man must remain master of the machine. The exploitation of industrialized building processes must begin by studying the social and human needs that buildings have to serve.
- 4 That industrialization is not an isolated technical process, and that acceptance of a trend towards more industrialization means that the architect must work in closer cooperation with builders, industrialists, town-planners and others. He is however the one member of the building team with a view of the whole problem and he must select and synthesize the activities of others so that the ultimate end is kept always in view.

I was left with several convictions. One, a pervading and powerful, if unspoken argument, that the package dealer seems to have the answer to the demands of most foreign economies and is universally gaining ground. In some countries no other means is known, for the architects are likely to be package dealers themselves.

In our country, opposition to the progress of the package dealer is vociferous and apprehensive. He is condemned by professionals, but at the same time the professional in seeking to extend his, the professional's authority, while simultaneously seeking relief from responsibility furnishes the package dealer with a telling argument which cannot help but advance the package dealer's interests.

When one attempts to get the cake and the penny too, one stands a good chance of losing both. The fearless man, in embracing further responsibility, will carry off the prize.

The Education of Power

We may have endeavored to make a profession of a vocation. Is design and production of buildings fundamentally suited for a profession? This speculation would lead into a complex argument. First the profession would have to be satisfactorily defined and I fear that in attempting to define a profession all I would succeed in doing would be to further the thought that income-producing activities are essentially business. Also my belief was strengthened that actual control of design and

planning lies with power, either financial or political, and the most we can do is to educate power in order to make it appreciative of the economic and esthetic advantages to be gained by the engagement of the talented and technically trained man—the architect.

The early and continued intimate association of architects and all others engaged in the construction industry, including the financial elements, is essential to the successful replanning of our country. This is an axiom which we seem to have forgotten in the early part of this century with the insistence of those who would hold that the science of building is purely a profession—an argument certainly not advanced by those geniuses who have produced in the past and even now produce the great buildings of the world.

We were informed that the theme of the next Congress is to be "Problems of Architecture in Concrete," a tribute to Nervi. But in selecting so special a subject it would seem to me that UIA had given tacit recognition to the limitations of an architect to indulge in philosophic or economic programs until and unless the architect can shed the shackles which the profession has thrust upon him and can emerge again as the master builder and assume the responsibility that that title commands.

I sometimes think the Anglo-American professional concept, and one which is not particularly shared by architects in other countries, may have been an unconscious attempt to preserve the practice of architecture for a sacred cult. Perhaps we are headed for something bigger, and better.

Another impression which I took away with me was the impact of Pierre Vago on the architectural world. The UIA is his thought, his creation, and without him it would not have come into being. Without the continual exercise of his genius it is doubtful whether it would continue to exist.

The UIA could and should become a force—a force for international understanding and progress. As such we would do well to support it, but in supporting it we must not continue to impose upon the willing and sacrificial handful of men who have contributed their own time and money to international understanding. Our interest in international progress, betterment and fellowship

must stem from our own association itself and be supported by our Board of Directors and the Convention. We must understand the necessity and importance of international cooperation and labor by architects.

We spent a few days in London after the Congress. We were far from the end of seeing kind people. Eric Bedford, Architect for the Ministry of Works, and his wife took us to lunch at the Ivy. This was a nostalgic excursion, for my wife, for in her youth an occasional gallant would take her there but, as the young man was usually an undergraduate and not affluent, they dined on the second floor—walk a flight and save. Eric entertained us on the first floor.

After a delicious meal we went to 10 Downing Street and Whitehall to see the rehabilitation jobs being done on both of those historic structures—a complicated operation in light of the age of some of the buildings and the complications of the original planning, if you can call it that, some of which still remains. I admired not only the skillful engineering and architecture but the capabilities of those who measured the ancient structure which must have required surveyors of rare gift for accuracy. We went to see the wine cellar which had been moved from one building, lowered and put under another. The wine cellar itself being several centuries old was moved in one piece—an engineering triumph requiring imagination, daring and experience. We went to Marlborough House to see the restoration work.

We left England and flew to Switzerland. We stayed with some of our friends in their beautiful villa about a thousand feet on the hillside above Vevey, with magnificent views, lovely gardens and a host of interesting friends. So for two weeks we wallowed in ease, luxury and, I am sorry to say, far too good food. I approach the bathroom scales with proper respect and considerable trepidation.

Thanks to Professor Tschumi we had a complete tour of his Nestlé headquarters building. The photographs entered in the Reynolds competition did scant justice to it. The site is unparalleled for a business office, so much so that I wondered how any work could ever be accomplished.

Airplane trips are conducive to reflection and this was no exception. ▲

Subscription Price Increase

Beginning January 1, 1962, the following yearly subscription prices for the *Journal* will become effective: Subscription in the United States, its possessions and Canada, \$5.00; elsewhere, \$6.50 per year. Chapter Associate members, \$2.50; Students, \$2.50; Members of art museums, associations, etc., \$2.50 (by special

group arrangement). Single copies, 75¢ except in quantity lots.

The price increase, made necessary by rising production costs will not affect subscriptions for Corporate Members since the price of the *Journal* is included in annual dues.

All subscriptions received before December 31, 1961, will be honored at current *Journal* rates.



A. Reinhold Melander, President, Duluth, Minnesota; Chandler C. Cohagen, 1st Vice President, Billings, Montana; Paul W. Drake, 2nd Vice President, Summit, New Jersey; A. John Brenner, Secretary, Phoenix, Arizona; C. J. Paderewski, Treasurer, San Diego, California; Earl L. Mathes, Director, New Orleans, Louisiana; John E. Ramsay, Director, Salisbury, North Carolina; George F. Schatz, Director, Cincinnati, Ohio; Walter F. Martens, Past President, Charleston, West Virginia

The California Story

by C. J. Paderewski, AIA

► The westward movement with the resulting explosive increase in population during the past twenty years has had a terrific impact on every facet of governmental, business and professional life in California. The architectural profession is no exception.

To meet the demands of this gargantuan flood of new residents, the construction industry was required to rise to unprecedented heights to build residences, apartment houses, shopping centers, churches, commercial buildings and governmental facilities.

Federal assistance for GI's, who wished to complete their college education, brought about a condition which found the universities unprepared and incapable of handling all those who applied for entrance. The schools of architecture in California universities were forced to use surplus barracks buildings and temporary facilities to meet the demand. Enrollment increased ten to twenty times normal. You can guess what problems were faced by the California State Board of Architectural Examiners when these graduates clamored for registration to practice architecture in California.

And this was not the only problem. Graduate architectural students from out of state universities heard of fabulous opportunities in California and began migrating west to work in architects' offices here.

In addition, architects in other states began looking with envy at what California could offer in the freedom of architecture, the excellent climate and apparently unlimited building programs requiring architects.

How did this effect registrations?

Well, the Board of Examiners found that the number of candidates for registration increased steadily until the peak year of 1957 when 930% more candidates were registered than in a normal pre-war year. This high level had held through 1960.

The number of candidates taking the written examination every six months has averaged approximately 700.

California conducts a two-stage examination permitting those who have matriculated from an accredited school of architecture, or an equivalent five years experience in an architect's office, to take the first stage if they choose to do so. The second and final stage is taken by those who have complied with the state law requiring a minimum of seven years total school and practical experience under an architect's supervision.

Though this does not comply with the total of eight years as a minimum under the NCARB certification requirements, the California Board of Examiners is recommending to the AIA California Council and to legislature that legislation be initiated to increase our minimum to eight years.

In analyzing the ratio of those taking the first stage to those qualified to take the entire examination, we find that of the 700 examinees, approximately 28% are in the former group and 72% in the latter.



The author,
C. J. Paderewski

Of the seven sections which make up the examination, records indicate that the average number of sections taken by each examinee at each examination is 3.5 sections.

The total number of sections of the examination taken by the examinees range from 3600 to 4000 sections per year.

Many questions have been raised concerning California's position with respect to registration of applicants who are registered to practice architecture in other states.

California recognizes and accepts those architects who are certified by the NCARB.

It is the policy of the California Board that out-of-state architects must necessarily comply with the California law regulating the practice of architecture and to that end, whatever is required of those who live in California must also be required of out-of-state applicants.

Therefore, any architect who holds a Junior or Senior Certificate from the NCARB and has passed an examination in another state equal in the judgment of the Board to that required in California, may at the discretion of the Board be required in lieu of a complete written examination to:

Submit a treatise or treatises on such subject or subjects as the Board may prescribe, including but not limited to the effect of seismic forces on buildings, and solve a structural problem, or;

Comply with above, and in addition take such portions of the written examination as the Board may prescribe.

Normally, because, through the efforts of the

NCARB, written examinations are becoming uniform in all states, only a treatise and problem are required in most cases to satisfy the requirements that every applicant has a knowledge of the effect of seismic forces on buildings. This additional requirement is necessary because of the fact that, with the exception of two states, none of the other states include examination in this area.

For those out-of-state applicants who wish to establish permanent residence in California and who do not plan to ask for registration in any other state, California will accept a direct application without NCARB Certification with the same requirements listed above.

In any case, the out-of-state architect must apply directly to the California Board and appear before the Board for an oral interview before a determination is made as to eligibility for registration in California and the extent of additional requirements.

In the past year eighty-seven out-of-state architects were registered to practice architecture in California.

Therefore, it is evident that the California Board is not attempting to "keep out-of-state architects out of California," as the misinformed seem to believe.

The California Board has been quite concerned with the degree of qualification of applicants to practice architecture. The California law requires experience in the actual practice of architecture. The Rules and Regulations state that the "Actual practice of architecture shall consist of drafting, designing, supervision and general architectural practice under the supervision of an architect." Therefore we insist on diversification of experience which must be verified by all employees.

To qualify for the final stage of the written examination the applicants must include verified experience in *all* of the following:

Architectural Design

Working Drawings

Specification Writing

General Supervision

and in *at least three* of the following:

Site Planning

Structural Design

Mechanical and/or Electrical Engineering

Administration and Client Contact

Insistence on over-all experience in the many facets of the practice of architecture is producing gratifying results. Because the written examination should be and is based largely on the practical application of the applicant's knowledge, we find that diversification of experience prepares him better for the examination, and more important, to meet the responsibilities of the profession after he is registered. ◀

Library Notes

Gifts to the Library

January 1 to June 30, 1961

AMERICAN SOCIETY OF PLANNING OFFICIALS

"Motion Picture Films on Planning and Housing — A bibliography"

ARCHITECTURAL INSTITUTE OF JAPAN

Its "A.I.J. Structural Standards"

LEOPOLD ARNAUD, FAIA

6 pamphlets and magazines

CENTRAL NEW YORK CHAPTER, AIA

"The Construction of Gothic Cathedrals" by John Fitchen, a chapter member

CONSULTING ENGINEERS COUNCIL

Its CEC "Manual"

CORNELL UNIVERSITY, SCHOOL OF HOTEL ADMINISTRATION

Its "Hotel Bibliography—1959"

CLINTON H. COWGILL, FAIA

2 volumes

DC PUBLIC LIBRARY

"Publications Relating to Urban Renewal—1959"

JOSEPH F. DUSENBURY, AIA

"Building Laws of the City of New York in force in 1896"

EAST AFRICA INSTITUTE OF ARCHITECTS

Its "Yearbook 1960/61"

EDITH EMERSON

Violet Oakley's portfolios, "The Holy Experiment" and "Law Triumphant" presented in memory of Miss Oakley.

EVERGREEN HOUSE FOUNDATION

"The Laurence Hall Fowler Collection of the Johns Hopkins University"

FACING TILE INSTITUTE

Slide set on "Structural Clay Facing Tile"

GSA LIBRARY

8 issues of U.S. Supervising Architect Annual Report

GERMAN EMBASSY

Report on Berlin Competition

JACQUES GREBER, HONORARY FAIA

"L'Œuvre de Henri Prost"

WILLIAM H. HAUSSMAN, AIA

"The Architecture, Furniture and Interiors of Maryland and Virginia" by N. W. Elwell

HAWAII STATE PLANNING OFFICE

"General Plan of the State of Hawaii"

INSTITUTO DE ARQUITETOS DE BRASIL—BRAZILIAN DELEGATION TO UIA CONVENTION

Gift of slides on Brazilian architecture

FRANCIS T. KING

Copies of drawings of 19th century residence, Parkersburg, W. Va.

LIBRARY OF THE SUPREME COUNCIL 33°

"The Laying of Cornerstones"

JOHN T. CARR LOWE

"The Annals of a Fortress" by Viollet-le-Duc

MARTIN LOWENFISH, AIA

Slide projector

MRS. GORDON T. MILLER

Her article on "Octagon house in Worcester"

MIMARLAR ODASI, ISTANBUL SUBESI

Its Publication on architectural competitions

MODULAR BUILDING STANDARDS ASSOCIATION

Slide set on "Modular Dimensioning"

ANGEL E. NAKPIL

His "A Review of Philippine Architecture"

NATIONAL CAPITAL PARKS

"The Old Stone House" by C. W. Heine

NATIONAL COUNCIL OF ARCHITECTURAL REGISTRATION BOARDS

39th Annual Report NCARB

NORTH REFORMED CHURCH, NEWARK, N. J.

"An Architectural Study" by Julia Sabine

WILLIAM B. O'NEAL, AIA

One pamphlet

PEOPLE-TO-PEOPLE PROGRAM

6 pamphlets

RICHARD W. E. PERRIN, FAIA

2 issues of Wisconsin Magazine of History with his articles

GEORGE E. PETTENGILL

"The Cathedral of Granada" by Earl Rosenthal

PITTSBURGH DEPARTMENT OF CITY PLANNING

1960 Annual Report of the City Planning Commission of Pittsburgh

MATTHEW L. ROCKWELL, AIA

A report by Stanton and Rockwell on Comprehensive plan report on Village business district of Wauwatosa, Wisconsin

LEWIS J. SARVIS, AIA

3 books

EUGENE J. STERN, AIA

33 volumes

SUPER MARKET INSTITUTE, INC

"Index of Super Market Articles 1960"

MISS ELISABETH K. THOMPSON, AIA

One magazine

US NATIONAL PARK SERVICE, EASTERN OFFICE DIVISION OF DESIGN AND CONSTRUCTION

"An Architectural Study of Fort McHenry" by Lee Nelson

WILLIAM J. WAGNER, AIA

His "Sketches of Iowa Landmarks"

DR BRUNO E. WERNER

"Neue deutsche Architektur"

MR ERNEST A. WYSS

9 volumes

MR COSTACHE ZAVU

"Rumanian Architecture"

DONORS OF SLIDES OF AIA HONOR AWARDS

Henry Hill, AIA

Hugh Stubbins, FAIA

John Carl Warnecke and Associates

Minoru Yamasaki and Associates

In the list above, there are two gifts which stand out because of the circumstances accompanying their presentation. In one case Mr Lowenfish learned that the Institute had no slide projector and volunteered to remedy the deficiency. In the other the Central New York Chapter presented a copy of the writings of one of its members because of "the pride our chapter feels in this accomplishment of our esteemed fellow member."

But whatever the circumstances, the Library is grateful to those individuals and organizations who, through their thoughtfulness in making donations, have contributed to the strengthening of the Library's collections.

G.E.P.

Memo from William H. Scheick, Executive Director



Clinton H. Cowgill, FAIA



"Clint" Cowgill, by the time you read this, will be basking in the warm retirement sun of California, where he and his wife have moved. It's always difficult to say good-bye to an old friend and a dedicated fellow-worker, but the fact that he has consented to act on a consultant basis with us from time to time softens the move. Clint came to the Octagon in 1956 as the retired head of the School of Architecture at Virginia Polytechnic Institute in Blacksburg, Virginia. He joined us to edit the

now well-known AIA Handbook of Architectural Practice and remained with us as head of the Office Practice Department (now to be called Professional Practice). The great strides made in that department of the Octagon are obvious to the great majority of our members. As an author of many *Journal* articles, as an organizer, as staff member to a number of AIA committees (AIA-EJC, Office Practice, Documents Review, Religious Buildings, and Housing for the Aging) Clint has done an outstanding job—and always with that twinkle in his eye and an understanding in his heart. He leaves a big gap for Bob Piper to fill. We wish you and your wife health and happiness, Clint, and many happy "returns."

Robert J. Piper, AIA



Stepping into the office of Professional Practice is Robert J. Piper, AIA, of Rockford, Illinois. Bob joins the Octagon staff after being associated with the Rockford firm of Orput-Orput & Associates, architects and engineers. He received his BS in architectural engineering from the University of Illinois and his Master of Regional Planning degree from Cornell University. The newest Octagon staff member is an associate member of The American Institute of Planners, a member and

former Vice President of the Rockford Chapter, AIA, and a member and development advisor for the Rockford-Winnebago City-County Planning Commission.

The Department of Professional Practice, and the Committees which it serves, will spearhead the newest developments in the expansion of architectural services so strongly recommended by the Committee on the Profession. Bob Piper has had extensive experience with specifications, contract documents and the operations of an architectural firm in a "typical" American city. We are confident that these qualifications, plus his vigor and enthusiasm will give him a flying start as Clint Cowgill's successor.

M. William Perreault, AIA



I have already introduced Bill to you in a past article, but at that time no picture was available. So, in order to introduce him to you visually, we present his photograph. To refresh you on Bill's duties

at the Octagon, let me say that he is the head of the Department of Education and has, in the short time he has been with us, made contributions to our plans for the expansion of the work. He came to us from Cornell University where he was Assistant Professor of Architecture. He received his degree from Cornell and was associated with Roy Larson in Philadelphia for five years.

Your Octagon Staff

► This is the third occasion within a few months when I have used my space in the *Journal* to introduce new men on the Octagon staff. Let me first dispel any stray impression that we are loading the salary budget.

Two men filled vacancies: Matt Rockwell, the new Director of the Division of Public Services, and Bill Perreault, the Head of the Department of Education. Robert J. (Bob) Piper, our newest recruit, fills the position of Head of the Department of Professional Practice to succeed Clinton H. Cowgill, who decided it was time to have consulting status only with the national headquarters.

Thus, three valuable additions have been made to the staff without creating new positions. As our membership grows and additional service activities are expected by the membership, new jobs will be established from time to time with the approval of the Board of Directors.

Staff building is primarily my responsibility as well as the policies which guide our selection of new personnel. I would like you to know my thoughts on this subject.

A basic requirement for most of our jobs is that the man must be a corporate member of AIA and thereby a licensed architect. Exceptions occur in certain important jobs in public relations, publications, government relations and membership administration. An architect who is temperamentally suited for professional society work is rather a rare animal. He is entering upon a career of service to the profession which precludes exercise of his talents for creative design. The right man *can* find deep satisfaction in society work, the wrong man can be frustrated trying to please 14,000 "bosses."

Next, let's take a look at the ages of some newer members of the team: Carl Barefoot, thirty-five, Assistant Editor of the *Journal*; Bob Berne, forty-four, Head, Department of Architectural Building Information Services; Elliott Carroll, thirty-eight, Head, Department of Chapter and Student Affairs; Bill Perreault, thirty-eight, Head, Department of Education; Bob Piper, thirty-five, Head, Department of Professional Practice; Matt Rockwell,

forty-five, Director, Division of Public Services. If you observe a purposeful accent on youth, you are right.

We are not recruiting young men for the sake of youth alone, but for very logical reasons. First, is a policy of building staff *in depth*. It is my hope that the younger members of our team will become candidates for top echelon jobs, including that of the Executive Director, as our senior staff members reach retirement. Secondly, we are finding young men with the outlook, vigor and imagination of their contemporaries in practice, who in a few years will become leaders in the profession and the Institute. This group of members and staff will literally mature together in AIA activities and management.

If a few gray-beards are wagging in dismay over the prospects of a prodigy staff, please note I have not mentioned some key people at the Octagon who are near or over fifty. I am confident that we are getting a nice balance of youth and maturity, and equally confident of a generally robust and fresh way of thinking on the part of all.

A third objective in staff building is breadth of talent stemming from breadth of education and experience.

The conduct of our activities covers virtually every aspect of architectural practice as well as relationships with the other design professions and the building industry. We must have personnel who have talents for legal and judiciary matters, public relations, publications editing and design, political affairs and research. Matt Rockwell and Bob Piper bring to the Octagon our first technical competence in urban design.

In the diversified activities of national headquarters each member of our staff has an opportunity to employ his talents in a teamwork effort that crosses departmental lines. On the other hand, in each department there is the opportunity for each staff member to become truly *expert* in several phases of our profession's advancement.

Naturally, our recruits must know how to deal with people, as committees of AIA or as individuals. They must be able to stimulate thinking, faithfully interpret other people's ideas, and translate into action the expressed needs of the membership. I have asked them to perform expertly the services the membership expects, and to originate ideas *beyond* these expectations.

When new positions are created, a guiding policy will be to seek people of greater talent at appropriate salaries, rather than mediocre people at lower salaries.

I have the feeling of high morale in our headquarters staff which is bound to show in their performance. When you get the chance, come to the Octagon and meet as many of them as you can. ◀

Book Reviews

School Building—Examples and Developments. Karl Otto. Stuttgart, Alexander Koch, 1961. 216 pp illus. 9 1/4" x 11". \$19.50

Probably one of the best of recent collections of case-studies of school buildings from several countries in spite of annoying deficiencies in translation. There is a complete parallel of German and "English" texts, captions and keys to illustrations.

The first of three introductory essays: *School building in modern society* (Hellmut Becker)—which is reprinted in slightly revised form on page 93 of this issue of *AIA Journal*—struggles with the history of schools in German tradition *vis à vis* newer ideas, many of which are a matter-of-course with us. There are many "should" phrases which reflect the difficulties of dislodging entrenched positions and a few hints of conflict between parent and school.

The second brief essay: *Schools reflecting the pedagogical movement* (Wilhelm Dressel, a visitor to the Octagon about six years ago) contains some interesting facts on compulsory education in Germany. It indicates that this next decade will probably see introduction of a mandatory tenth grade. . . . The so-called "Broad outlines. . ." or federal plan for public education gives quite definite directives (for school planning) in the old-fashioned centralized manner.

The third essay, from which the book takes its title: *School building—examples and developments* (Karl Otto) outlines school programs based on the Fifth International Congress for School Construction (Zürich 1953) and the West German Conference in 1956.

These short papers are followed by an excellent seven-page diagrammatic plan summary and comparison of half of the schools illustrated in the more than fifty case-studies which take up most of the volume.

The case-studies are in four groups: small, medium and large primary schools, then secondary schools. While far more examples are from Germany and Switzerland it is significant that among the American schools (which include only one from California and one

from Texas) are five by one architectural firm. This is an office working largely in the well-heeled suburbs of Detroit, whose schools are characterized by good finishes, permanent materials, ample planning, exceptionally well-equipped special facilities—and sometimes high costs per square foot compared with other areas. It is also in a high labor-cost area. This is not a negative criticism. It is good to see these values, which are recognized and voted for locally in these American school districts, confirmed by the architectural judgment of those who are looking at school design from an international point-of-view. There are other, perhaps more human and appealing, values in certain Californian work, that of John Lyon Reid, FAIA, for instance, which are absent in this book.

It is also quite significant, although perhaps not obvious to visitors from abroad, that these custom-designed schools by Eberle Smith Associates are not a product of the nearby assembly-lines. They are by no means standardized buildings. They are indeed filled with mass-produced components. By a curious twist—in Germany such schools would have custom-designed lighting fixtures.

The romantic, "highly differentiated" plans of Hans Scharoun—a noted "non-cartesian"—would be anathema to all of those architects impelled by cost-consciousness here who seek simple perimeters. Lovely spaces, we can say, with a little regret.

There are a few book-defects: Glossy paper, scales are metric only, no site areas and they vary enormously, no dates or enrollment figures for many examples. Finally, a few difficult terms in translation. We badly need the four-language glossary the UIA School Commission is working on. Some of these confusions are undoubtedly due to our ignorance of program. The term "collection" often appears and indicates a room for educational display (as well as protected storage) of objects and demonstrations for the sciences—a refreshing reminder that two-dimensional education is not enough.

Flood Proofing: An Element in a Flood Damage Reduction Program.

John R. Sheaffer. Chicago, University of Chicago, Dept. of Geography Research Paper #65, 1960. 198 pp illus. 6" x 9". \$4.00

This paper outlines studies of the various methods of flood-proofing existing and planned structures in known flood plains.

The book is well organized and provides an extensive bibliography. The following general headings may indicate the scope of the discussion:

the concept of flood-proofing
selecting an urban place for study
estimating flood losses
economic feasibility of flood-proofing
applicability of flood-proofing

The city of Bristol, Tennessee, was chosen as a case study because of availability of data, knowledge of terrain and pattern of floods. Considerable information is given on estimated amounts of losses caused by floods over the past 92 years. The case histories are quite extensive, showing the actual dollar loss and the amounts that could have been salvaged providing proper flood-proofing methods had been taken. Statistical analysis points out those areas where flood proofing would be of economic benefit. Community effort, rather than individual efforts, is recommended.

The US Corps of Engineers had 1,033 authorized projects in 1955, of which only 349 had been completed. Between authorization and actual construction of these flood control projects, more than twenty years will have elapsed. In this period losses may be considerable if the owners of the properties do not flood-proof the buildings.

The community where this study was made is subject to periodic floods, resulting in heavy financial losses. It is suggested that individual owners provide water-tight bulkheads which could preserve merchandise and machinery, ie, the obvious financial risks involved in damage to computing equipment in a bank should warrant adequate flood-proofing.

Still, many of the area's business people interviewed felt that the investment required for flood-proofing could not be justified. They preferred to take the chance of being able to protect their property by the means then at hand, which usually consists of sand-bagging.

The interests that financed the Pittsburgh Golden Triangle Project

have seen fit to install water-tight bulkheads in areas where extensive equipment installations are below the known highwater level.

General recommendations include: setting the buildings on columns above known highwater level, or providing impervious walls, or by making provisions so the walls can be made impervious at a minimum of cost and difficulty.

Whenever possible, flood-control projects should be inaugurated. Where flood-control is not economically justifiable, flood-proofing is recommended as the next step toward protection of property. A combination of flood-control of flood plains and flood-proofing of buildings is another alternative.

Some of the needs may be summarized as follows: ". . . First, basic hydrologic and economic data must be available for planning and design purposes. Second, a flood forecast appears to be essential for the effectuation of many flood-proofing measures. Third, local communities need technical guidance to design and undertake such programs. Fourth, the question of cost-bearing for flood-proofing must be resolved . . . the possibility of financial aid to private sources must also be explored. Finally, since flood-proofing is only one of several elements in a comprehensive flood damage reduction program, it needs to be reconciled with other adjustments such as flood plain regulations. Only when the above conditions are met can flood-proofing become a viable choice."

The basic steps to be taken to reduce the financial losses due to inadequate measures for the prevention of recurring floods are very well outlined and illustrated in this book. THOMAS F. McDONOUGH, FAIA

Tradition and Creation in Japanese Architecture. Walter Gropius and Kenzo Tange with photos by Yasuhiro Ishimoto. Yale, 1960. 36 pp, 150 pp illus. \$15.00

"We can understand the architecture of nations and periods only as we win an inside knowledge of their way of thinking and their philosophy," says Walter Gropius in this book which proves that the reverse can also be true. For in their lucid essays on the Seventeenth Century Katsura Palace, one of the noblest edifices of Japanese architecture, both Gropius and the Japanese architect Kenzo Tange, give us fascinating insights into the

essence and evolution of Japanese thought and art. Gropius, like other travelers, is deeply impressed by the old Japanese culture. But, far from sentimentalizing, he derives from it practical inspiration for an approach to our—and Japan's—living, present-day problems. In Zen abhorrence of purely intellectual reasoning and emphasis on spontaneous response to direct experience, he finds his own thinking, as exemplified in the Bauhaus, startlingly confirmed. Tange puts the marvel that is Katsura and its gardens into the context of Japanese cultural history. He views the design of the palace as the creation of the confluence of the aristocratic "Yayoi" culture and the emergent peasant culture of the "Jomon," harmonized by the mediating influence of Zen. The handsome format of this volume, designed by Herbert Bayer, does full justice to the beauty and tender loving care it depicts. It should delight not only architects, art historians and students of Japan, but all who are intrigued by the Japanese devotion to simple beauty.

W.V.E.

Papers on Flood Problems, edited by Gilbert F. White. Chicago, University of Chicago Department of Geography Research Paper No 70, 1961. 228 pp illus. 6" x 9". \$4.00

This group of research papers deals with new views of the nature of flood problems in the United States and of ways of dealing with the rising toll of flood losses. Although largely the work of geographers concerned with conditions in which flood plains are invaded and used, it includes provocative analysis from the economic, engineering and public administration points of view.

A fresh statistical analysis of annual flood losses since 1903 separates catastrophic losses from non-catastrophic losses, and shows a definite upward trend for the latter.

A system of subsidy payments to individual property owners independent of actual development and of specific flood-protection measures is suggested as an alternative to current public policy.

The relation between information on flood hazard and occupation of flood-prone areas is examined for Topeka, Kan. (where a flood-hazard map recently has been released by the US Geological Survey) and for a segment of the Little Calumet flood plain in Indiana.

Using the Ohio Basin as an example, two new classifications of flood characteristics are offered. One deals with the flood-to-peak interval relating to efficiency of flood warning services; the other gives a more precise division of seasonal flood types.

From rapidly growing experience in regulation of flood-plain land, appraisals are made of the Tennessee Valley Authority, the Corps of Engineers, British activities, and establishing a new state regulatory program in Iowa. A possible three-fold classification of flood plains into prohibited, restricted, and warning zones is suggested. Taken together, the papers outline limits and guides to a new strategy for dealing with flood-loss reduction. By suggesting circumstances in which flood plain occupancy is changing and has been regulated, this volume indicates lines along which the expanding US Geological Survey and Corps of Engineers studies may be expected to move.

E.P.

Books Received

The books listed below have been received for review. Their listing here does not preclude their review at a later date.

The Selection of Retail Locations. Richard Lawrence Nelson. New York, F. W. Dodge Corporation, 1959. 422 pp illus. 6 1/4" x 9 1/4". \$9.00

Equipment in the Home, Appliances, Wiring and Lighting, Kitchen Planning. Florence Ehrenkranz and Lydia Inman. New York, Harper & Brothers, 1958. 308 pp illus. 11" x 7 3/4". \$6.00

Elements of Reinforced Concrete. Sylvan P. Stern. New Jersey, Prentice-Hall, Inc, 1959. 444 pp illus. 6" x 8 1/2". \$10.00

Building Cost Manual. Chicago AIA and Real Estate Board. New York, John Wiley & Sons, Inc, 1957. 376 pp illus. 8 1/2" x 11 1/4". \$15.00

Specification and Engineering Writer's Manual. Thomas S. Sawyer. Chicago, Nelson-Hall Co, 1960. 226 pp. 5 3/4" x 8 3/4". \$6.95

Build for Tomorrow. Harry Steele Price, Sr. Dayton, Price Brothers Co, 1960. 162 pp. 5 3/4" x 8 3/4".

Editor's Page

Some Thoughts Engendered by Reading Malcolm Cowley's "Criticism: A Many-Windowed House," in the Saturday Review, August 12, 1961:

Mr Cowley is, of course, speaking of literary criticism, whereas our interest, of a professional nature at least, is confined to architectural criticism. Yet are not the basic principles of criticism the same, whether the object be literature, music, painting or architecture? Mr Cowley quotes from an essay by John V. Hagopian: "The critic's duty is to determine as nearly as he can what feeling-qualities are embodied in the form-content of the work, how they are embodied there, and how well. . . . He has no other task; evaluations of historical significance, autobiographical expression, moral goodness, or philosophical truths are purely gratuitous for criticism, even though [how generous!] they may be valuable to the other disciplines of the humanities."

Thus the critic, a disembodied spirit, is supposed to find for himself an all-seeing vantage point in space, where he can stand shredded of the last vestiges of personality, subjectivity or even humanity, whence to view and judge the essentially human creations of the minds and hearts of men.

Who can criticize architecture? Depending somewhat upon the nature of the work of architecture, the architectural historian, the efficiency expert, the design professor, the social philosopher, the architect, the plain, ordinary (but intelligent and well-informed) man-in-the-street. The comments of all these critics are valid. Are any of them capable of near-divine objectivity, and if so, could such an individual be able truly to evaluate the work of a man born of flesh-and-blood parents and brought up in a sticks-and-stones environment?

To go further with Mr Cowley: "Literature is not a pure art like music, or a relatively pure art like painting and sculpture. Its medium is not abstract like tones and colors, not inorganic like metal and stone [sic]. Instead it uses language, which is a social creation, changing with the society that created it. The study of any author's language carries us straight into history, institutions, moral questions, personal stratagems, and all the other esthetic impurities or fallacies that many new critics are trying to expunge."

So is architecture a "social creation, changing with the society that created it," and the study of any architect's work carries us "straight into history . . ." and so on, just as Mr Cowley says above. There can be no objective criticism in architec-

ture, as there can be no abstract architecture. By its very essence, architecture is human, and must be judged as it fulfills human needs and as the work of a very human being.

Art is a personal, human creation; criticism of art cannot be otherwise. The appreciator of art—the critic, whether he be simple observer or sophisticated professional—re-creates the work of art within himself, if he does not he is simply looking at it, not experiencing it. It is impossible to go through this intellectual/emotional experience objectively. Art is human—certainly architecture is human, and criticizing architecture is, or should be, a human experience available to all knowledgeable people. I am not weasling on my argument when I include that word "knowledgeable." A man must know how to read before he can appreciate literature, and the more he knows about literature the better appreciator and critic he can be—as long as he doesn't wear blinders.

So I oppose the school of professional critics who insist on complete objectivity in evaluating a work of art. Perhaps they can de-humanize themselves, but they can't de-humanize art. *They* are wearing the blinders.

A Correction—and Grand Central Station

I wish to correct an error I committed on the Editor's Page of the August issue. In speaking of the New York Central's plan to hang three floors of bowling alleys, or other such lucrative tenancies, in the airspace of the "concourse" of that grand old building, I fell into a trap which has apparently caught many others. It is not the *concourse* which the NYC proposes to reduce to a mere fourteen-foot headroom, it is the *waiting room*, south of the concourse.

This was brought to my attention by both Doug Haskell and Bob Weinberg, and I am grateful to them, for it lessens my personal pain. I have checked other sources of information, in both the magazines and the newspapers, and I find this has rarely been made clear. There has been a confusion of terms and many writers and observers seem to have made the same mistake I did.

I am happy that the concourse is not immediately threatened. Although handsome, the waiting room is of lesser importance. But the principle remains and is still worth fighting for. Furthermore, if the Central successfully converted its waiting room, and liked the feel of the additional dollars, it surely would not be long before the concourse itself would be slated for income-producing "modernization"—and I say a plague on it! A plague on this whole trend toward wiping out past beauties for present profit.



Earthquakes

by **Herbert J. Powell, FAIA**

Member of the former AIA Committee on Disaster Control Studies**

► In all history, earthquakes have filled men with terror and left ruin and destruction in their wake. Undoubtedly, many buildings of antiquity would have survived to modern times, were it not for the lack of lateral stability in unreinforced stone masonry.

Aristotle and Pliny recorded earthquakes: St Paul's release from prison at Philippi was caused by an earthquake. Great destructive earthquakes have occurred down through the centuries. In the year 1755, Lisbon was destroyed by an earthquake of such intensity that its effect was felt as far away as Scotland and Scandinavia where inland lakes rose and fell with the vibration of the earth's crust. The Assam earthquake of 1897 was felt over an area of one and three quarter million square miles.

In the United States, earthquakes have been felt in every state. The largest number, by far, occur in California. The most potentially destructive earthquake recorded in the United States was the Great Central Valley quake of 1811-12, centering at New Madrid, Missouri, rated as one of the twenty great earthquakes of known history. Due to the sparsely settled character of the Mississippi Valley at that time, there was insignificant loss of life; an earthquake at Caracas, Venezuela—during this same period—claimed 10,000 lives.

In April, 1906, occurred the California earthquake that left San

*Third of a planned series of Technical Reference Guides of which the following have been published to date: *Hurricanes*, AIA Journal October 1959; *Tornadoes*, AIA Journal, May 1960; Reports in preparation: *Termites, Snow & Sleet, Lightning*

**As of January 1961, this committee has been joined with the former AIA Committee on Building Codes; its new name: *AIA Committee on Safety in Buildings*, chairman: Ralph O. Mott, AIA

Francisco in smoking ruins. Seven hundred lives were lost in this activity on the San Andreas fault line, the longest known active fault line in the world.

In Chile, on 21 May 1959, began a series of earthquakes of magnitudes up to 8.5 on the Richter Scale. These shocks lasted for three days and did not diminish in severity as usually is the case.

At Concepcion, which has been destroyed five times in the past by earthquakes, only well-designed earthquake resistant buildings survived the first shock. Over five thousand lives and \$400,000,000 property loss was the toll.

The foregoing comments demonstrate the wide extent in time, and the broad geographical distribution of earthquakes. The US Coast and Geodetic Survey estimates that more than a million earthquakes occur throughout the world annually. Of this great number, possibly 700 may be classed as "strong," capable of causing important damage in the areas of their occurrence. The great majority are so slight that they are not felt, and their only record is on instruments.

The science of seismology (the Greek word meaning shake) received its name from the Englishman, Robert Mallet, in 1858. At that time, he applied the laws of wave motion in solids to the study of earthquakes—an application which has proven to be correct. As scientific study of earthquakes progressed, certain terms were introduced to define different characteristics of seismology, as follows:

Seismic focus—The region within which the sudden displacement occurs, that results in sending out the radiating waves

Epicenter—The point on the earth's surface, vertically above the focus

Meizoseismal area—The area within which the shock is most strongly felt. (Actual ground motion drops off sharply as it travels away from the epicenter, losing as much as 90% of its intensity in a distance of twenty-five miles, varying with soil conditions.)

Disturbed area—The broader area where the shock may be felt without the use of instruments

Fault—A line of fracture in the earth's crust; along such a line probability of earthquakes is greatly increased. Many faults do not show at the surface

Tremblor—Earthquake

Lateral force—In seismology, the horizontal component of a force resulting from an earthquake, causing principal damage to buildings and against which, structural design is aimed.

Earthquakes are caused by subsurface stresses, accumulating along fault lines until their power becomes so great that a sudden slippage occurs at the fault. The stresses are relieved, and an elastic movement traverses the earth's crust; felt most strongly in the meizoseismal area, diminishing as it passes through the disturbed area, and finally at a more remote distance, may only be perceived by the use of instruments.

Extent of Damage

Although earthquakes have been felt in every state in the Union, and no region in the United States is immune from them, major quakes inflicting heavy damage have occurred only in the following areas of North America:

Technical

1663 St. Lawrence River,
Canada 11-12 MMI*

1811 New Madrid, Mo. 12 MMI

1873 Owens Valley,
Calif. 10 MMI

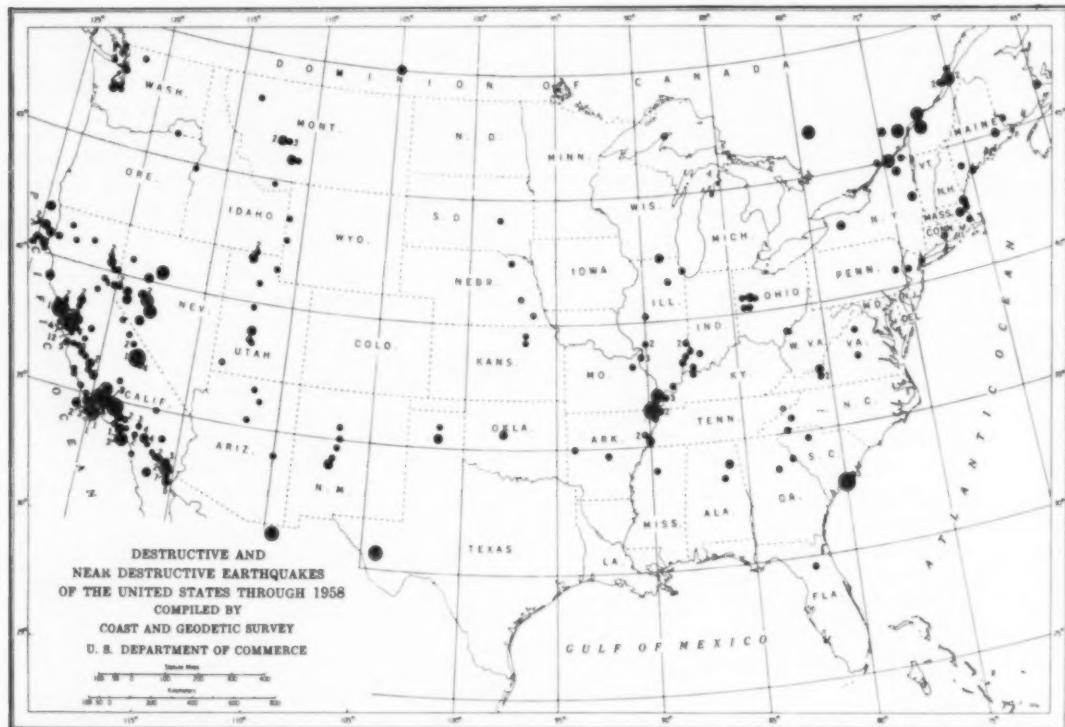
1886 Charleston, S. C. 10 MMI

1906 San Francisco,
Calif. 10 MMI

1933 Long Beach, Calif. 9 MMI

It is to be noted, that the damage inflicted by the Great Central Valley earthquake, centered in New Madrid, was comparatively light

*Modified Mercalli Intensity (estimated)



because of the sparseness of building and development; whereas, in the Long Beach earthquake of 1933, not to be compared in intensity or magnitude with the former, 120 persons lost their lives, and property damage exceeded forty million dollars.

As our population increases and areas become "built-up," the damage to property and life will greatly increase in the future unless building construction, in the most likely areas of damage, takes earthquakes into account. (See *Elements of Lateral Force Design*.)

The region of greatest activity is California. Great fault lines extend up and down the state from Owens and Imperial Valleys, on the east of the line of the Sierras, to the greatest of all faults, the San Andreas, with its auxiliary faults, Hayward, in the Bay Area, and Inglewood and San Jacinto in the south.

Passing through populous areas, the San Andreas fault holds the greatest damage menace. In addition to destruction of buildings, come the breaking of utility lines—water and gas; fires that often follow a tremor; losses in equipment and contents of buildings; as well as damage to reservoirs, dams, bridges and other heavy construction.

The Atlantic seaboard had one

major earthquake in the last century, and none so far in the 20th century. The same is true of the Central Valley area of our country. Yet, the Charleston earthquake of 1886 caused the death of sixty persons and many buildings were ruined or severely damaged. It should be borne in mind that, even today, Charleston has a great number of old buildings still standing and serviceable. In fact, J R Freeman, upon visiting the city forty-five years after the earthquake estimated that, ". . . perhaps 75% of the buildings existing at the time of this great earthquake are still doing good service."

The great San Francisco earthquake of 1906 shows that sinister companions often accompany an earthquake. Although the loss at present day values would be in the order of a billion dollars, 95% of the loss was caused by the fire that followed, and many of the 700 lives lost, were by fire.

In 1932, just a year before the so-called "Long Beach Earthquake" in Southern California appeared a book titled "Earthquake Damage and Earthquake Insurance." Its author, John R Freeman, was president of the Manufacturers Mutual Fire Insurance Company and a past president of the American Society of Civil Engineers. This remark-

able book, written by an engineer, is one of the most valuable practical books in its special area; written from the standpoint of a business executive, it is easily read by the layman. Its 900 pages are crowded with information on all phases of earthquakes; from causes, distribution, lessons to be learned structurally, earthquake insurance, and codes, to predictions on future damage due to geological characteristics of different parts of our country. Some of his data on structures have been modified in the light of subsequent information.

Times of future quakes are unpredictable. In earthquake regions, a long period of quiet following a major shock increases the chance of recurrence, but not necessarily in that same location.

There is general agreement that chances for extensive damage are predictable. Simply stated, solid, firm foundation material tends to minimize damage. Buildings built entirely on soft, uncompacted soil or partly on such soil, and partly on firm material, show severe damage if of average, or poorer, construction.

Types of Damage

The overriding loss caused by earthquakes is the loss of human life. All considerations of building de-



Smith, Powell and Morgan

A section of sidewalk slides up over its adjoining walk

sign therefore are aimed at reducing this loss of life.

Light earthquakes

often pass unnoticed by the majority of persons.

Moderate quakes

may not cause building damage, but the contents are more vulnerable; glassware and china falls from shelves; lighting fixtures swing or break; small plaster cracks may open up; clocks stop; and small masonry cracks weaken walls.

Very strong earthquakes

have a minimum effect on well-designed buildings, but cause serious damage to unbraced structures. Exterior walls of unreinforced masonry may fall; unsupported parapets and cornices land in the street below; untied tiles slide off roofs; chimneys break away from the structure; windows shatter; free-standing shelving tips over; furniture moves about; frame houses built on low "cripple" walls are displaced horizontally.

Severe, destructive quakes

cause breaks in water and gas lines; roads and sidewalks buckle; minor damage occurs to well-engineered structures while buildings of poor quality are leveled.

Earthquake Scales

Various methods have been devised for measuring the magnitude of earthquakes. Most of these have attempted to relate the sensations of human beings to the degree of shock; also, the amount of damage has been used as a gauge.

The following scales, the Rossi-Forel and the Modified Mercalli, have been used most frequently, although the Richter scale is gaining favor with seismologists.

Rossi-Forel Intensity Scale (1883)

Not causing structural damage

I Recorded by a single seismograph, or by some seismographs of same pattern, but not by several seismographs of different kinds; the shock felt by an experienced observer . . . *Almost Imperceptible*

II Recorded by seismographs of different kinds; felt by a small number of persons at rest . . . *Feeble*

III Felt by several persons at rest; strong enough for the duration or direction to be appreciable . . . *Very Slight*

IV Felt by several persons in motion; disturbance of movable objects, doors, windows; creaking of floors & ceilings . . . *Slight*

V Felt generally by everyone; disturbance of furniture and beds; ringing of some bells . . . *Weak*

VI General awakening of those asleep; general ringing of bells; oscillation of chandeliers; stopping of clocks; visible disturbance of trees and shrubs; some startled persons leave their dwellings . . . *Moderate*

Causing damage

VII Overthrow of movable objects; fall of plaster; ringing of church bells; general panic, without serious damage to buildings . . . *Strong*

VIII Fall of chimneys; cracks in walls of buildings . . . *Very Strong*

IX Partial or total destruction of some buildings . . . *Severe*

X Great disasters; ruins; disturbance of strata; fissures in the earth's crust, rock-falls from mountains, landslides, etc. . . . *Violent Destructive*

Modified Mercalli Intensity Scale of 1931

1 Not felt except by a very few under especially favorable circumstances. (I R-F*)

2 Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing. (I to II R-F)

3 Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not rec-

*Rossi-Forel scale



Buildings constructed on wood cripples are displaced laterally in an earthquake

ognize it as an earthquake. Standing motorcars may rock slightly. Vibration like passing of truck. Duration estimated. (III R-F)

4 During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably. (IV to V R-F)

5 Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbance of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop. (V to VI R-F)

6 Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight. (VI to VII R-F)

7 Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motorcars. (VII R-F)

8 Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motorcars disturbed. (VIII to IX R-F)

9 Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken. (IX R-F)

10 Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river-banks and steep slopes. Shifted sand and mud. Water

splashed (slopped) over banks (X R-F)

11 Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.

12 Damage total. Waves seen on ground surfaces. Line of sight and level distorted. Objects thrown upward into air.

Richter Scale

Measurement of magnitudes of earthquakes has been placed on a more scientific basis than by either the Modified Mercalli or the Rossi-Forel scales by Professor C F Richter of the California Institute of Technology. The scale he devised is based on the maximum recorded amplitude shown on a standard type of seismograph, such as the Wood-Anderson Torsion Seismometer. The upper limit of magnitude is about 8.6, the lower limit is 0. Any shock above 7 is a major quake. The Lisbon earthquake of 1755, the San Francisco quake of 1906, the Assam quake of 1950, and the Chile quake of 1960, all had magnitudes exceeding 8 on the Richter Scale.

It should be added that this scale is logarithmic and not numerical; thus, a magnitude of 2 is not twice that of 1, but 63 times.

Seismic Design and Building Codes

In general, local codes in the US do not make provisions for earthquake resistant design. It should be noted, however, that hurricane design and provisions for high velocity winds employ much the same principles as lateral force design in earthquake areas.

Seismic considerations, to varying degrees, are a part of the following codes:

American Standard Building Code Requirements for Minimum Design Loads in Buildings and Other Structures. Approved 3 Sept 1955. American Standards Association, 70 E 45th St, NY 17, NY. (Sponsor: Natl Bureau of Standards). 29 pp, \$1.50.

Earthquake loadings are considered in some detail.

Earthquake Design Requirements of the Uniform Building Code;

F M Andrus. Proc., Symposium on Earthquake and Blast Effects on Structures; pp 314-316; 1952.

The Field Act of the State of California; Harry W Bolin. Proc., Symposium on Earthquake and Blast Effects on Structures; pp 309-313; 1952.

California Administrative Code, Title 21, Public Works, contains rules and regulations established by the State Division of Architecture for the enforcement of the California School Safety Law (Field Act). Those desiring details should communicate with the California Division of Architecture, Sacramento, Calif.

The Earthquake Resistance of Buildings from the Standpoint of the Building Code; Henry D Dewart. Seismological Society of America Bull. 19: 96-100; 1929.

Earthquake Provisions in Building Codes; H M Engle. Seismological Society of America Bull. 43: 233-237; 1953.

Recommendations — Earthquake Resistant Design of Buildings, Structures, and Tank Towers; prepared by H M Engle and John E Shield, 1950 revision; 83 pp; Pacific Fire Rating Bureau, 465 California St, San Francisco 4, Calif. (originally published in 1936 by the Board of Fire Underwriters of the Pacific).

Many illustrations of earthquake damage.

Uniform Building Code (1958 Edition); publ by International Conference of Building Officials (Pacific Coast Building Officials Conference subsidiary), 610 S Broadway, Los Angeles 14, Calif. Degrees of seismic protection required by this code is based upon seismic probability map for the US, containing a non-seismic zone 0, and zones of increasing seismic activity designated 1, 2, and 3.

National Building Code (1955 Edition); publ by National Board of Fire Underwriters, 85 John St, NY 38, NY.

Contains sections in appendix recommended for adoption in regions which have been subject to earthquakes.

Basic Building Code (1955 Edition); publ by Building Officials Conference of America, Inc, 110 E 42nd St, NY 17, NY.

This code contains a section on earthquake load for regions where

VALUES OF COEFFICIENT "C"

Part or Portion of Building	Value of "C"	Direction of force
Floors, roofs, columns & bracing in any story of a building or the structure as a whole	.60 $N + 4.5^\circ$	Any direction horizontally
Bearing walls, nonbearing walls, partitions, free standing masonry & concrete walls over 5 feet in height	.20 (within a minimum of 5 psf)	Normal to surface of wall
Cantilever parapet and other cantilever walls above roofs of buildings	1.00	Normal to surface of wall
Exterior & interior ornamentations & appendages	1.00	Any direction horizontally
When connected to or a part of a buildings: towers, tanks, towers and tanks plus contents, chimneys, smokestacks & penthouses	.20	Any direction horizontally
Elevated water tanks and other tower-supported structures not supported by a building. Anchorage of such structures	.12 .20	Any direction horizontally

* N is number of stories above the story under consideration, provided that for floors or horizontal bracing, N shall be only the number of stories contributing loads. This factor shall be applied to the summation of all required loads above the story under consideration. N is equal to 0 for one-story buildings.

local experience or records of the US Coast & Geodetic Survey show loss of life or damage of buildings resulting from earthquakes.

Elements of Lateral Force Design

A considerable bibliography on earthquake resistant design has been produced. This is most important for the professional structural engineer who deals daily with earthquake design. An understanding of simple basic principles will be of value to architects.

The Horizontal Component of the motion of an earthquake acts against the inertia of the building due to its weight and its loading. Codes establish values for this force to be resisted, varying with types of soil on which foundations rest.

Title 21 of the California Administrative Code sets forth provisions for the safety of construction of public schools.

From Title 21, this seismic force F is as follows:

$$F = CW$$

in which

F = seismic force in pounds

C = a coefficient given in table below

W = total dead load, tributary under seismic action to the elements under consideration, except for warehouses and tanks in which case "W" shall equal the total dead load plus 50% of the total design live load for tanks. Machinery, snow loads and other fixed loads shall be considered part of the dead load. (see table "Values of Coefficient 'C'")

The Vertical Component of earthquake motion is not usually a design consideration.

Overturning

Each building must be investigated to withstand overturning; the average one-story building is in no danger of this. Taller buildings are insured against overturning by determining that the building dead load is not less than 1.5 times the overturning force F. Anchoring the building securely to foundations is necessary as protection against the building's tendency to rock in a quake.

Torsional Movement

It has been determined that, the

closer the center of mass of a building is to the center of reactions of resistive structural elements, the smaller will be movement due to torsion. Design correction—where these two centers are quite widely spaced—consists in adding additional stiffening opposite the offset of the center of resistance, bringing it closer to the center of mass.

Shear Walls and Rigid Frames

It is readily seen that resistance of walls parallel to a horizontal force is much greater than that of walls which are perpendicular. Since it cannot be known in which direction earth movements will act, forces are assumed to act from any direction.

The simplest way to brace a building then, is to count on sections of solid walls to conduct the load from roof to footings; such walls are called "Shear Walls" and are most important in the earthquake design vocabulary. This is more effective than designing columns to resist lateral forces, although, where shear walls cannot be used due to plan requirements, a braced or rigid frame may be employed.

Diaphragms

Upper floors and roofs, when so designed, act as rigid diaphragms; these transmit live and dead loads to shear walls or braced structural frame.

Horizontal members not only resist lateral forces but transmit forces to vertical members which function principally as resisting elements.

Foundations

In earthquake design, lateral forces finally are carried through footings to supporting soil. In order that the building will act as a unit in resisting earth motion, it is important that foundations be continuous and be well tied together. Column footings are often tied together and into walls by reinforced horizontal beams.

Resistance to Collapse

It has been stated above, that a building's resistance to the lateral movement of an earthquake is by transmission from one structural element to another; thus, live and dead loads of roof and upper floors, if any, are transmitted through shear walls and/or columns to foundations and on to the supporting soil.

The keyword "transmitted" emphasizes the final design considera-

tion. At each transmittal point there must be carefully designed connections, which are much stronger than those designed for typical vertical loads. These connections enable the building to move as a unit, they are of vital importance in preventing collapse.

Most of the development of the principles of earthquake resistant design in the US has been done in California; steady progress in this field has been made since the first tentative attempts following the Long Beach earthquake of 1933. The work of the Division of Architecture in its administration of the *Field Act*, with its *Title 21* covering design of public schools, has been outstanding.

Architects wishing to expand their knowledge of this subject, are advised to write for *Title 21* of the California Administrative Code, State Division of Architecture, Sacramento, California.

Conclusions and Recommendations

Although the earthquake history of a larger part of the US gives a sense of comparative security to the inhabitants, thoughtful architects should become familiar with the simple engineering principles involved in earthquake design and employ them in their building design as their judgment may suggest.

Experience in California demonstrates that well-designed buildings are successful in resisting earthquakes. In an addendum to "Earthquake Damage and Earthquake Insurance," previously mentioned, John R Freeman states his broad conclusions on earthquake-resistant construction. He noted the very successful resistance to the violent Japanese earthquake of 1 September 1923, by many tall buildings in Tokyo. These buildings had been designed to resist a horizontal force equal to 10% of the superincumbent weight at each floor level.

This reference guide could best be concluded in quoting Mr Freeman's five recommendations. Although written in 1932 they are still, in the main, appropriate today:

- Design future important buildings up to 100' in height to resist a horizontal static force equal to 10% of total weight (live and dead) above each floor level.
- Provide for maximum practical amount of rigidity, and in buildings more than four stories in height obtain this by means of a steel frame made rigid by corner bracings between girders and columns



Marble shower stalls went over like dominoes although an adjacent brick wall shows no damage

with the whole framework imbedded in outer walls of reinforced concrete, and with floors of reinforced rock-concrete rigidly connected to outer walls.

• For any important building more than 100' tall, try out a scale model on a shaking-table by the principles of dynamic similitude, according to methods of Professor Jacobsen of Stanford University.

• That well-built factory buildings and warehouses up to 4 or 5 stories high with brick bearing walls and having strong wooden floors carefully tied into these bearing walls, will resist the worst quaking experienced in Charleston, San Francisco and Santa Barbara, is tolerably well proved by the evidence of the old Cotton Mill at Charleston, SC, the Folger Warehouse in San Francisco, and many others.

• Wooden dwellings up to 2½

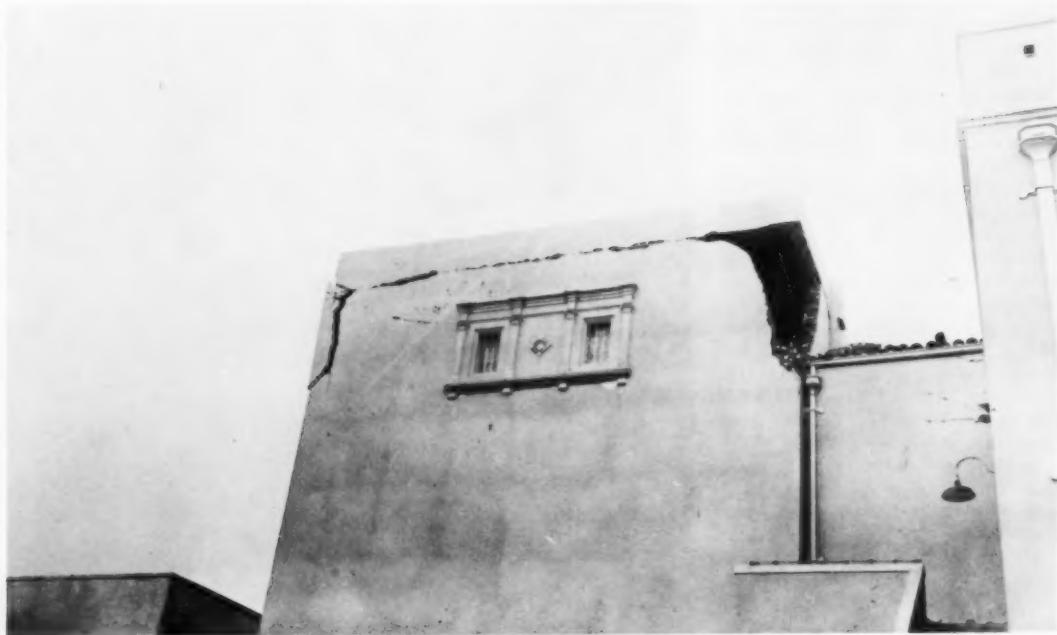
stories tall, designed on common-sense lines, with a well-braced frame and well-built, resting on a strong continuous concrete foundation, and having plastering on heavy expanded-metal lathing, will mostly resist earthquakes wonderfully well and present no hazard to human life. Such buildings can have their chimneys prevented from falling, although built of brick, by reinforcing these with steel angles and bands.

Source Material

The bibliography of seismology is large, and is constantly growing. In 1958, the Earthquake Engineering Research Institute, San Francisco, California, published its second edition of *Bibliography of Engineering Seismology* by Edward P Hollis. Its 138 pages list some 700 individual authors and sources.

The following is a representative bibliography on this subject, se-

Smith, Powell and Morgan



Smith, Powell and Morgan



Top photo left: Rigid roof slab displaced from walls. This illustrates the need for strong special-designed connections at the intersection of roof and wall. Below: Jefferson Junior High School after Long Beach earthquake of 1933—total destruction of a type III building (masonry walls, wood joist floors and roof construction). Right: A girls gymnasium. Trusses battered down the brick supporting walls



Smith, Powell and Morridge

lected especially for its practical value to the practicing architect who would like to increase his knowledge in this field.

Abbreviations:

ACI: American Concrete Institute
 ASCE: American Society of Civil Engineers
 EERI: Earthquake Engineering Research Institute
 GSA: Geological Society of America
 SSA: Seismological Society of America

General:

Benioff, Hugo

Earthquakes and Rock Creep (Part I: Creep Characteristics of Rocks and the Origin of After-shocks). SSA Bull 41: 31-62; 1951.

It is known that elastic characteristics of rocks depart greatly from the assumption of strain proportional to stress and independent of time. This paper deals with possible relationship between these characteristics and origin of aftershocks.

Byerly, Perry

Earthquake Origin and Propagation. Proc., Symposium on Earthquake Blast Effects on Structures; pp 1-7.

Nature of Faulting as Deduced from Seismograms. GSA Special Paper No 62; pp 75-85; 1955.

California, State Earthquake Investigation Commission

The California Earthquake of April 18, 1906. Report publ by the Carnegie Institution of Wash, 1908.

In Vol II, pp 31-32 Prof H F Reid discussed briefly the possibility of predicting earthquakes by measuring strains in vicinity of a fault.

Gutenberg, B

Mechanism of Faulting in Southern California Indicated by Seismograms. SSA Bull 31: 263-302; 1941.

Earthquakes in North America. Science, 111: 319-324; 1950.

This paper takes up the Richter instrumental magnitude scale and its use in producing reliable data on relative seismicity of different regions. Seismicity of North America is discussed concisely. Various lines of seismological research are treated briefly, such as geodetic studies in vicinity of the San Andreas fault, relation of earthquakes and aftershock sequences to rock creep, difference between Pacific and Atlantic crustal structure, ultimate source of energy manifested in earthquakes, etc.

Gutenberg, B; Richter, C F

Seismicity of the Earth. Princeton Univ Press; 310 pp, 34 maps, 2nd ed, 1954.

This book is indispensable to all concerned with seismicity of any part of the globe.

Macelwane, J B

Forecasting Earthquakes. SSA Bull 36: 1-4, 1946.

This paper is a report of Dr Macelwane's lecture delivered over CBS, Jan 13, 1946.

Ransome, F L

Remarks concerning *earthquake prediction* from Prof Ransome's address as retiring president of the Washington Academy of Sciences; Journal Wash Acad Sci, 10: 106; 1920; also SSA Bull 10: 50; 1920.

Prof Ransome said: "In spite of difficulties I believe that it is within the range of possibility that some day we shall be able to predict earthquakes with sufficient reliability to give the prediction practical utility."

Reid, Harry Fielding

The Elastic-Rebound Theory of Earthquakes. Univ of Calif Bull Dept of Geology, 6: 413-444; 1911.

The Mechanics of Earthquakes. *The Elastic Rebound Theory. Regional Strain*. Chap 9, pp 87-103 of *Physics of the Earth*, Vol VI, Seismology.

This chapter is a very clear and concise treatment of elastic rebound theory.

Sudden Earth-Movements in Sumatra in 1892. SSA Bull 3: 72-79; 1913.

This paper discusses triangulation work preceding and following the severe Sumatran earthquake of 1892. Crustal displacement revealed by these surveys gave strong support to elastic rebound theory.

Richter, C F

Elementary Seismology. San Francisco, W H Freeman & Co; 1958. An excellent discussion of the field by this professor at California Institute of Technology.

New Dimensions in Seismology. Science, 128: 175-182; 1958. Earthquakes are characterized by geographical position, instant of occurrence, depth and magnitude. Sassa, Kenzo; Nichimura, Eiichi

On Phenomena Forerunning Earthquakes. Disaster Prevention Research Institute, Kyoto Univ, Kyoto; Bull No 13, pp 1-8, Feb 1956.

This paper describes tiltmeter and extensometer observations in Japan, as related to occurrence of strong nearby earthquakes.

VanderHoof, V L

The Major Earthquakes of California: a Historical Summary. Calif. Div Mines Bull 171, Part II, paper No 2, pp 137-141; 1955.

See complete data under sect 6.0.

United States Earthquakes, publ each year by Coast & Geodetic Survey; printed by the Government Printing Office, Wash 25, DC.

Earthquake Damage to Buildings:**Abbott, C D**

The St Lawrence Earthquake of February 28, 1925; SSA Bull 16: 133-145; 1926.

Discusses damage to industrial structures at Three Rivers and Shawinigan Falls, Quebec.

Alvarez, Arthur Carl

The Santa Barbara Earthquake of June 29, 1925. Effects on Buildings of Various Types, Conclusions; Univ of Calif Publ in Engineering, Vol 2, No 6, pp 205-210; 1925.

Bolin, Harry W

Behavior of Field Act School Buildings in Earthquake Nothing Less than Spectacular. Southwest Builder & Contractor, Aug 22, 1952; pp 33-34 & 36.

Describes the highly satisfactory behavior in the 1952 Tehachapi earthquake of all school buildings built subsequently to 1933, under provisions of the Field Act.

Earthquake Lessons from Kern County (earthquake of July 21, 1952). Calif Architects—Calif Council of Architects, Vol 1, No 4, 1952.

Freeman, John R

Earthquake Damage and Earthquake Insurance. McGraw-Hill 904 pp, 1932.

A painstaking compilation and discussion of data on seismic behavior of buildings in many parts of the world.

Massachusetts Institute of Technology, Conference on Building in the Atomic Age.

Thornley, J H; Albin, Pedro, Jr

Mexico City's Earthquake Damage Examined. (earthquake of July 28, 1957). Civil Engineering, 27: 722-726; 1957.

US Coast & Geodetic Survey
Earthquake Investigations in California 1934-1935.

Earthquake damage to Type III buildings in Long Beach is discussed in Chapter 8 by Prof R R Martel.

Earthquake-Resistant Design for New Buildings:**American Society of Civil Engineers**

Wood Diaphragms: Progress Report of a Subcommittee of the Committee on Timber Structures of the Structural Division. Proc. ASCE, Paper 1433, 10 pp, Nov 1957.

Benjamin, Jack R; Williams, Harry A

The Behavior of One-Story Brick Shear Walls. Proc. ASCE, Paper 1723, 300 pp, July 1958.

Describes tests on plain (unreinforced) brick masonry walls subjected to shearing loads in the plane of the wall. It was found that such wall panels will develop significant strength when properly confined by a frame of either reinforced concrete or structural steel. Without such a bounding frame, their strength is very limited.

The Behavior of One-Story Reinforced Concrete Shear Walls. Proc. ASCE, Paper 1254, 49 pp, May 1957.

Deals largely with tests of one-story plain and reinforced concrete walls subjected to shearing loads in plane of wall.

Bolin, Harry W

Earthquake-Resistant Design for New School Buildings. Eng News Rec 118: 415-419, March 18, 1937.

This excellent article explains methods developed in California for designing earthquake-resistant schools in wood, steel, reinforced concrete, and reinforced brickwork.

Earthquake Construction Inspection.

This 24-page brochure gives valuable direction for inspection of earthquake resistant construction, prepared by a committee of the Earthquake Engineering Research Institute, San Francisco, Calif.

Schools Illustrate Progress in the Use of Wood. ASCE Centennial Trans, Vol CT, pp 805-813, 1953.

Combs, Theodore C

The Strength and Rigidity of Wood Floors as Diaphragms. SSA Bull 26: 55-61; 1936.

Aseismic Design of Wood Structures: Duration of Stress Considerations. SSA Bull 29: 539-547; 1939.

Dewell, Henry D

Report of Committee on Building for Safety Against Earthquakes—Preliminary Report of Subcommittee on Framed Structures: Wood, Steel & Ferro-Concrete. SSA Bull 15: 175-195; 1925.

Ewing, Merle A; Herd, Charles M

Criteria for Structural Design in California Schools. Paper No 36, 15 pp; World Conference on Earthquake Engineering, 1956.

Green, Norman B

Bracing Walls for Multistory Buildings. Proc ACI 49: 233-248; 1953.

Especially significant for design in seismic regions—develops methods for designing multistory reinforced concrete bracing walls by treating them as a special type of beam and column frame having relatively wide members.

Hammill, Harold B

Flat Slabs on 25' Spans in Earthquake-resistant School. Eng News Rec 118: 918-919, June 17, 1937.

Discusses design of Glen Park School in San Francisco, a two-story reinforced concrete building utilizing walls, floors, roof, and interior columns as indeterminate frames for resisting earthquakes.

Lin, T Y

Lateral Force Distribution in a Concrete Building Story.

Moore, William W; Darragh, Robert D

Some Considerations in the Design of Foundations for Earthquakes.

Plummer, Harry C; Blume, John A

Reinforced Brick Masonry and Lateral Force Design. Structural Clay Products Institute, Wash, D C, 271 pp; 1953.

Portland Cement Association

Analysis of Small Reinforced Concrete Buildings for Earthquake Forces. Publ by Portland Cement Assoc, Chicago, Ill; 67 pp; 1955. □

Research for Architecture

by Eric Pawley, AIA

► Architecture is concerned with esthetic and functional arrangement and treatment of all constructed spaces in which man lives. In the broad sense of the term it deals with the *economy* of environment.

Several words in this statement imply creativity, which is the essence of any artistic endeavor. In turn, creative insights are based upon a prepared mind, schooled and experienced in some special area of thought. In addition, whether it is a question of business success, artistic fulfillment, or their combination in professional service, creativity is impelled to seek new answers to problems, old or new. Today, this means research.

Research for architecture, therefore includes fundamental studies of design as defined by the functions of various building types as well as by our total sensory environment in and about them. In turn, these imply exploration of the emergent behavioral sciences to explain how man acts and reacts as an individual or group-client, as one or many who use architectural space and the services which provide it. The factor of esthetics cannot be limited to appearance alone. It is not superficial visual excitement but signifies design of the whole sensory environment.

Research for architecture is not new but has been undertaken only in fragmented projects without coordination, with wastefully inadequate exchange of information and without evaluation of the total program for coverage, depth or adequacy of results. Only by responding to these needs can we build toward the long-range objective of useful, authoritative information. This is not in any sense a call for centralized direction of research activities, which we believe cannot and should not be dictated, but for a coordinating, evaluating, disseminating operation—an effective stimulus and source of knowledge to be made available for the improvement of the shelter of man and his activities.

AIA Research Results

In the decade 1950-1960, The American Institute of Architects, thru staff and committee activities, produced or effectively influenced at least one million dollars worth of research for architecture.

This conservative estimate of the cost of studies in the area of professional substance of architecture does not include other projects which were primarily organizational or of an office practice or public relations nature. In addition to AIA-budgeted projects it includes staff-participation in and stimulation of programs primarily budgeted by others but in which AIA staff and committees have collaborated or which have been influenced by them for the benefit of the profession and the public. The figure includes grants by foundations and government for work, the proposals for which were co-sponsored by the Institute.

No one is satisfied that this average expenditure of \$100,000 per year has been adequate for the work that needs to be done or which could be planned. In fact it has been the voluntary professional contribution of hundreds of members in committees which has given us the measure of achievement indicated in these notes—which is far beyond what could be bought for the estimated sum. Much of the work has necessarily been informational—research on research—AIA has no laboratories, shops or drafting rooms.

We need most of all a concise inventory of this research and a continuing index of current studies. These should index and abstract each significant project with data on personnel, budget and availability of publications. These projects already range from intensive studies of light and vision, thru considerations of such subjects as the corrosion of metals or fire safety, to, for a few examples of building types, the planning of hospital bedrooms, educational theatres or airport terminals.

For more than this decade (actually 1946-1960), the small staff

of the former AIA Department of Education and Research has been active as well in making results of such studies available, thru publication, lectures, conference organization and participation, seminars, advisory committee memberships, discussions with hundreds of visitors from this country and others, and thru correspondence which literally has been world-wide.

AIA-NSF Conference

In 1959, as an important check-point after some six years of work by the AIA Committee on Research (two of them with a steering committee representing several other professions and social sciences), a three-day working conference of thirty-five authorities was held at Ann Arbor, Michigan, with the aid of a grant from the National Science Foundation. Objective: To discuss and to define the scope of research for architecture and to suggest typical studies and categories of research.

This most successful meeting has been reported in brief and in complete proceedings, the former version published in the *AIA Journal* and in reprint form. Keynote areas of discussion were: Architecture—structures—psychology—sociology—planning—environmental health. There were obvious disciplines omitted (economics, anthropology, etc) for lack of time and money.

General agreement was reached on need for such research and for trained personnel, on unimportance of rigid definitions of basic and applied research, on need for long-term support for such studies and on value and urgent need for continuity of cross-discipline discussions.

There were useful findings under each section and a long list of suggested projects appropriate for architectural schools or other agencies. A center and organization for research for architecture within the framework of the AIA was strongly advocated. This would operate in the areas of collecting and coordinating information, evaluation, pointing out needed studies, disseminating data, finally by assisting programs thru recommendation and co-sponsorship.

An AIA Program

Following quotations from a report* on the National Science Foun-

dation itself seem appropriate in this context:

"... Some are so impatient for progress that they mistake the application of known knowledge to be the sole standard of man's advancement. Reflection will show that applying knowledge is definitely not the only standard nor is it even possible in the first place unless there is basic knowledge on which to draw . . ."

"... the imperative necessity of science venturing into the unknown, irrespective of apparent lack of utility, is increasingly respected . . . the actions of the legislative branch of our government have reflected that important fact . . ."

(above quotations from foreword by Senator Hubert H. Humphrey)

"... basic research is regarded as involving the highest degree of uncertainty, with even negative findings constituting new information . . ."

"... pure research demands from its followers the freedom of mind to look at familiar facts from unfamiliar points of view. It does not always lend itself to organized efforts and is refractory to direction from above. In fact, nowhere else is the principle of freedom more important for significant achievement . . ."

"... the freedom to abandon as well as undertake a line of inquiry . . ."

(Dr Vannevar Bush)

"... the architect being uninformed in this vast field, will need specialists from all disciplines. Integrated research is necessary now, and ten years late . . ."

"... we need machinery to bring the scientific fraternity into close and regular contact with the architectural profession . . ."



It was suggested at the AIA-NSF conference that a reasonable minimum beginning program might include both staff and contract research as follows:

*** a research study group:**

location:

determined by access to disciplines and facilities — not tied to any one educational policy or educational institution

staff:

specialists from related disciplines

direction:

a qualified generalist — an architect with experience in research for architecture

functions:

to explore general problems in architecture and to perform certain research to develop methods for:

collecting

abstracting

coordinating and

disseminating

research useful to architects found in studies by others.

This research study group may be looked upon as a considerable expansion of activities already within the scope of duties of the AIA Department of Research.

*** contract research:**

This would be suggested and recommended by AIA or (as funds may be made available and earmarked for research) allocated to and monitored at various universities or other agencies on basis of appropriate facilities and personnel — this presupposes current knowledge of same kept up-to-date, a required preliminary project.

This too would be an expansion of AIA Research Department and AIA committee activities, already described, thru joint-projects or co-sponsorship of research programs (1950-1960) costing several hundred thousand dollars.



In addition to these suggestions

it should be noted that the AIA, representing the profession of architecture in the United States, has taken a minor role, without leadership, in the international scene.

Individual members have participated in a few international congresses and a few have been on exchange teams of architects and planners. The Institute has had a Committee on International Relations which has operated at the personal expense of its traveling members. A few traveling students have been aided. The headquarters has welcomed the sometimes time-consuming duty of acting as host to individual and team visits. A very few exhibitions of US architecture have been made available for showing abroad — some thru the US Information Agency, a part of the State Department.

Not many AIA members participate in the International Union of Architects (UIA) and it is only recently that the AIA Board (in an attempt to change some apparently hereditary appointments) established the policy that AIA representatives on UIA committees be related to and report to appropriate AIA committees. AIA has never collaborated with the extensive and excellent architectural documentation effort in Europe.

Those architects who have made the effort to break out of this isolation have found much to learn from abroad. We have no monopoly on architectural intelligence or skill and, as industrialization builds and rebuilds in other countries, there will be an increasing number of new solutions to old and new problems that we should know about. Our first task is to operate effectively at home but we cannot afford to look away from these ever-closer horizons. We must interchange information for mutual growth. It may be doubtful that this can be done entirely on a paper-exchange basis. The communication of fundamental concepts and applications in this complex field of environment has always required personal inspection and interpretation.

The AIA-NSF conference stressed importance of studies of existing buildings as an enormous unused laboratory.

As still another point in a possible AIA program of research for architecture we must note the need for trained personnel. This was remarked upon many times in the AIA-NSF conference and is a mutual responsibility of the architectural schools and the profession. □

*1959: NSF and the life sciences: Senate committee on government operations

School Building in Modern Society

by Hellmut Becker, Sociologist

► School construction has for centuries been a matter of secondary consideration to the German people who have believed that construction and maintenance of schools were functions of the state just as road maintenance or organization of the police force—necessary for the public welfare, but deserving no special attention. School administration formed a minor part of state administration and was regulated along the same lines as legal or financial affairs. The special educational mission of the school, requiring a special approach to its administration, was completely overlooked.

The Hand of History

This prejudice concerning schools was of course reflected in their design. As long as the educational system has been public, school design has been regarded of minor importance. The first public Latin schools of the Reformation had no buildings of their own, but were accommodated in secularized convents; pupils were kept in their cloisters and cells and instructed in monastic seclusion as if they were little grown-ups. Schools thus created by the mutual effect between philosophy and architecture resulted in a tradition that could not easily be changed by succeeding waves of spiritual evolution, and the medieval convent school was retained for a long period. The public school was thus run with the public excluded. The convent walls and enclosures were more than a visible limit—they influenced school architecture and the spirit prevailing inside the school. The independent mission of education did not manifest itself

in a special form of school buildings. The child had no realm of its own; hence, nobody thought of developing an architecture for his special needs. Even in the Age of Enlightenment the child was treated as a minor grown-up.

School architecture in the true meaning of the word did not come into existence in Europe until the end of the seventeenth century when the state began to consolidate educational matters in the same way as they improved road construction and provided sewage systems in a general effort to raise the level of public welfare. These school buildings from the times of Frederick William I and Frederick the Great were rather unpretentious but purposeful. Although artisans' taste and tradition successfully ameliorated administrative design, the scheme of these buildings clearly reflects the attitude that discipline and order were the principles governing building construction, internal school affairs and education. The floor plans were rectangular with a central hall. In front of the hall was the entrance, in back the staircase. Each story had two classrooms in each wing. Some of these schools are in operation still; their difference when compared with modern education centers is apparent, although it is not so pronounced as in the case of the barracks-like palaces built in the nineteenth century. Just as our present-day educators place a higher value upon the educational philosophy of the Age of Enlightenment and dispute conceptions of the nineteenth century, so also do they value the educational buildings of the eighteenth century more than those of the nineteenth. Nevertheless, the spirit of thriftness, the atmosphere of parsimony pertaining to the school buildings of the eighteenth century still overshadows our mod-

ern schools. The people of these times favored education, but only to a certain limit. Thus even these eighteenth century buildings violate the modern view that it is the level of education that decides the future of any nation. As far as there was any spirit at all in a school, it was distributed in ascetic portions and not allowed to blossom.

A large number of German schools came into being between 1871 and 1914 in a second wave of public school construction. Here again there is no style expressing the mission of educating young people—instead, these schools copied state administration buildings, and finally only the inscription chiselled into the front wall distinguished a school from a court of justice, a railway station or a military headquarters. Many of us remember the endless green painted halls that had to imitate the green trees supposedly conducive to the proper functioning of the eye. Although larger window openings were to provide more air and light, they were still high above the heads of children—the world was still excluded from the school [now the airconditioners are "proving" the case for windowless schools]. Desks, invented to induce a desired posture in children, flipped up to permit cleaning women to mop the floor—they were lined up like recruits on a training ground. For acceptance, any novelty had to be concerned with technique or hygiene; requirements evolved by educators and psychologists for reorganization of the educational program were ignored—the external appearance of the school itself smothered any thought of reforming.

World War I left German schools practically undamaged, therefore any reform ideas of the twenties, such as Richert's School

Reprinted from a new book in German and English—*School Building Examples and Developments* by Professor Karl Otto (see review p. 78) Stuttgart: Alexander Koch GmbH Verlag, 1961

Reform in Prussia, seemed like new wine in old bottles. The new method of approach that took into consideration the individual pupil was almost exclusively practised in the old military-style buildings. The strong impulse towards reform in the twenties did not have the chance of starting afresh from new foundations that we had, with a much weaker impulse, after World War II.

Even the third wave of school construction on the ruins of World War II had to fight down traditional architecture. Whatever has been really established in the schools of today, especially in Northern Germany, stems from the time between these two wars and from the discussions at the beginning of this century. However, the school still lacks space, in every sense of the word, to find adequate expression. Directions laid down during the twenties when reform was directed toward the individual child (apart from the group or society) cannot be followed without endangering the relation between school and society. Schools can be built to the specifications of doctors, psychologists and teachers only when it is known what these specifications mean to society.

The Chaos of Today

We are living in a highly compartmented society that is no longer divided into hierarchic levels. This society has no common ideal—different groups follow different ideals. Hence, society may be regarded as an attempt to live in liberty and to make it work by individual and group cooperation. None of the individual ideals has the power of determining school architecture to the exclusion of other ideals. The school has become the place where people following different ideals will cooperate; instructors have to set the example of freedom and cooperation for the pupils. This goes also for the parochial schools.

In modern society, man needs three qualities: reliability, versatility, and open-mindedness in international relations. Versatility is necessary to cope with more and more new and unforeseen problems and situations—this is true for the worker as well as the scientist. Reliability is needed because the events challenging versatility are simultaneously testing reliability. One result is that reliability has become almost as important as technical knowledge and

the relation between professional and moral qualities becomes more and more apparent. In addition, the world, exposed to a quite novel form of treason [the treason of ideas?] gives new value to the important feature of reliability. Open-mindedness is indispensable because the conception of one world no longer tolerates purely local considerations.

Reliability, versatility and open-mindedness are important properties, but still not ideals. Through them, however, the individual does find his or her position in society. These qualities are not restricted to the place of work or to relations between individuals—they determine all public activities, regardless of whether or not one has a public office.

Increased Social Responsibility of the School

Today many of the educational functions originally performed in the family have been transferred to the school. Although the family is still an important factor for the individual, its pattern-forming force has been weakened. No longer is man tied to life by a guild in Europe, thus the school has to prepare him for a freedom of quite different proportions. Even our democracy was conventionally nothing but the democracy of a class—the wealthy middle class. Originally this democracy lived on its tension with aristocracy, then the tension between it and the people, and finally the tension between rich and poor. Now social tensions are alleviated, tensions among classes or guilds are hardly important, even the tension between political parties slackens. Party programs have become interchangeable. Thus modern democracy, [according to this theory of vitalism] in order not to degenerate into pure formalism, has to generate the tension required for its existence. Active minorities have to animate the otherwise bloodless creation.

For this purpose, the school should develop and not hinder the initiative of the individual. The free world must not juxtapose a conformist vacuum to the totalitarian vacuum of the East. Schooling therefore must train the individual to independent action, mature decisions, assumption of responsibility. In this respect, our educational ideals are still developing, but schools should be built with the view of reinforcing the initiative of individual and group.

Architectural Expression of Social Ideas

For school construction and architecture, this means school furniture appropriate to combination and rearrangement, colors and forms capturing the imagination of the individual and challenging personal cooperation. Training children by means of art and games calls for rooms suitable for versatile use. Gymnasiums, festival halls with a convertible stage, school gardens where the children may work their own plots, and particularly work places suitable not only for training, but also for work with hobbies outside the school hours—all this suggests an abundant program to be followed by the architect as well as by the psychologist. Commensurate with the child's age, the effort should be exercised to convert the child's interest in hobbies to useful vocational education. Architecture should avoid playful nothingness. The pleasant appearance of the school and its interiors should invite tidiness and careful maintenance of its equipment. Modern society with its fast rhythm induces lack of respect for everyday utensils. Hence, school equipment should admonish both instructors and instructed to look after beautiful and practical things with care and should assist training in their thoughtful use.

Similarly school architecture should encourage other abilities of man needed for a successful approach to problems presented by the surrounding world. An understanding of the world's variety cannot be expected unless this world is built into the school—not antiseptic courtyards surrounded by high walls, but rooms opening to the outer world.

The "completed" education—contradictory in itself from the very beginning—is an impossibility today. The target of education is no longer possession of "eternal values," but the ability to find one's own ground. Teacher and assistants will have to guide and help the child prepare for this task. The school that is to reflect this attitude cannot have the appearance of a military barracks. The open recreation space, the wide portico open for a view into a pleasant lobby and the staircase—these are not only esthetic requisites which might find quite different solutions—they are expressions of the new spirit. It must be left to the architect to invent numerous

variations in retaining the open-mindedness of modern education. This open construction does not preclude provision of rooms for contemplation and concentration. Although the whole appearance of the school should be conducive to formation of friendships and to cooperation, an essential part of education lies in the self-discipline of concentration. Rooms for quiet study and scientific training come first in this connection. Modern education compromises between the demands and the temptations of the surrounding world; in just the same way the school should compromise between awareness of surroundings and concentration, the precondition of any mental effort.

Wave of the Future

Education in modern society is no longer reserved to upper social layers. The word school originally meant leisure—leisure one could afford and could spend in communion with things of a higher order because one was not immediately concerned with a fight for survival. Modern democratic society cannot survive without possessing a high degree of education. Education decides the fate not only of the individual, but of the properly functioning community; education has become a question of vital importance to both.

For a modern country, education has replaced the role of the army and armaments of the 18th century. The instructor in the elementary school and the university professor now have a position as influential as previous army commissions. The question of relations with underdeveloped countries is primarily an educational problem, the aid by the free world is a function of education. Hence our political future may already have been decided by our present-day education. The style of our schools will influence other buildings just as the military buildings of Germany's past affected house construction. School construction will become a central pivoting point of public concern for architecture.

This changed importance of schools and school buildings should produce another attitude of state and municipal construction agencies towards school construction. School construction must not take second place to other types of public construction. Since it is the most important public building, the school must be entrusted to the ablest architects. The history of

architecture on the Continent in these last fifty years shows many outstanding architects for industrial and church buildings, but the school has not animated the architect to such a degree and has not resulted in such an accumulation of knowledge [largely because of centralized control]. This imbalance should be adjusted now. The young architect especially should become familiar with problems of education in order to understand problems of school architecture.

Public school construction must not be guided by the same principles as the construction of other public buildings. The school world calls for special solutions that can be brought about only when all concerned cooperate. People providing the money for school construction are not identical with the people supervising the layout. Actually the child is the principal factor—he should be able to count on the aid of the administrator, the doctor, the psychologist, sociologist, etc., and especially on the parents' representative and his teachers. It is not regulation but coordination of forces concerned with the child and its education that should determine school architecture.

The modern school building should not be a public building on exhibit. The school modestly adapting to the landscape or the town picture ["town design" in Gibberd's meaning of the term] will radiate its spirit better than a magnificent castle, looking down on the main road—the school should not be removed from the natural surroundings. In no case should a school be built on a site left vacant by chance or accident. The central importance of the school should be stressed by architecture and town building—it should be the starting point of every town plan, especially traffic considerations. School centers as in the town of Marl (Ruhr) may set an example—they are imbedded in green belts, remote from traffic noise, surrounded by residential areas ensuring safe short walks to school. The school may also constitute a part of a cultural center and lend its hall, gym, and individual rooms to exhibitions and festivals. Combined with the kindergarten, the primary school, the public library and the theater, it may form the intellectual center of the community.

It must be remembered, too, that in town, buildings for adult education are different and separate from those for children—there are differ-

ent atmospheres in these kinds of education. In sparsely populated country, where one school often serves several villages, the school must also be used for adult education, and consideration must be given for this double utilization.

New Trends in the Old World

Restraint is commendable in issuing rules and regulations for school construction. Since the school decides our future, all important community forces should take shares in school development. Of course only the architect can direct the construction work, but school construction should be an object of public criticism, and all members of a community should consider the finished building their personal achievement. The school should be the result of the integration of social ideas, not merely the result of administrative measures.

First of all, German schools should comply with requirements of modern hygiene as is already the case in other highly developed countries. Proper lighting, cross-ventilation and separate lockers are usually provided in modern school buildings. It is astonishing to notice, however, that a whole nation is quite content with the idea that most children return from sports to the classrooms or home without any occasion for a showerbath. Showers should no longer be a luxury, just as toilets should require no lining-up and should equal the instructors' toilets in tidiness. Postwar shortages combined with the penny-pinching Prussian style have made tidiness and hygiene luxuries in many places. The effect of these installations [and their proper maintenance] should not be underestimated. A physician's room should be a matter of course in a school building. Although it is now generally recognized that the care for the health of the young should be improved, people usually forget that this calls for separate rooms.

Teachers and doctors should show the way to modern school education. The trend is to move the center from the teacher's desk to the center of the classroom, toward movable furniture appropriate for regrouping in a circle, and to recognize the need for a work room adjoining the classroom. Psychologists may advise use of colors to animate constructional details. Modern theories are symbolized by abolishing furniture screwed to the floor and replacing it with chairs and tables that can be rearranged.

Adaptability and Versatility

The school, however, cannot be merely an expression of the forces active in it. The history of education shows that school reforms have often failed because of the rigid style of available school buildings, thus the school of our time should lend itself to improvements by modern developments.

The skeleton plan of the German Committee for Public Education and the so called "Bremen Plan" of the Working Group of German Teachers' Associations are the most important plans so far available. Other plans will follow. Training in early years has become more uniform and interchangeable by standard education and courses: upper grades have added variety and enrichment by electives. The latter system will lead to formation of smaller groups and will call for a larger number of smaller rooms. The question is whether we will have more small schools or universal central schools in the future. It would be helpful if certain of these organizational decisions were made as soon as possible to prevent the forcing of undesirable developments in school construction by the *fait accompli*.

The secondary school (Gymnasium) will require work-rooms and extra equipment quite different from those of the primary school. Schools preparing for science must have equipment quite different from that of schools preparing for scholastic careers.

All-day schools call for kitchens, day rooms, play rooms and rest spaces. Training in the future will make more use of modern mass-training methods—each individual in a community has to take a critical stand here. We do not need schools with the latest technical facilities, but schools which will at least permit demonstration and discussion of such facilities so that we may have films, TV, records or tape-recorders whenever necessary without unnecessary costs. The school must not shift these new media into spare time hobby or leisure interests but should use them for raising the quality of the educational program.

The German School is predominantly coeducational. However, the importance of special planning requirements of girls' schools should not be underestimated. Here education must develop special feminine abilities and the school building should be adapted to this task. In an age where equality between the

two sexes is a matter of uniform agreement, the special inclinations of the woman should form the subject of special education and training.

The Teacher's Welfare

The school building should take account of the new position of the teacher in Germany. This is particularly necessary in a time when education decides the future of the individual. The most important point should be the teacher's independence of directions from his principals. Youth cannot be trained to assume responsibilities if the teacher demonstrates his dependence on educational authorities. This freedom should also be reflected in the school building. Rooms for teachers should be added to the usual conference room, especially a library which he needs most. There should be spaces for teachers where they can work, reflect, discuss problems with colleagues, and receive parents of pupils. For judges and administrative personnel, such rooms have long been a matter of course and many matters of importance are settled "in chambers." In the country school where the teacher has his own flat or apartment, to preserve his privacy it should be near the school but not in it. The self-administration of teaching assistants, a symbol of democratic self-government, calls for other special rooms.

Teacher and Parent

Last, but not least, the school should reflect the changed relation between school and parents. Previously parents were notorious enemies of the teacher. The home offered an education that was often contradictory to formal schooling, thus loading the child with controversies. On the other hand, the school communicated with parents only through administrative decisions offering no legal remedy for a parent.

Today the homes are few where true assistance in education is offered to the child. The essential factor of education apart from the street is the school. Parents are often helpless in this situation or have no time to deal with educational problems. On the other hand, in Germany the law enables one to sue a school on important issues. Here the school plays an important role of a mediator. It should advise parents upon educational questions pertaining to the home and kindle understanding and cooperation.

This may be assisted by meetings in which parents are familiarized with problems of modern youth. Regular discussion meetings should provide information on pedagogical problems so that contact between teacher and parent is not limited to those rare occasions close to the end of the school year. Continued contacts should prevent educational problems from maturing into lawsuits.

This activity should also be expressed in the school building. The large hall and stage should be complemented by a number of smaller rooms where teachers may meet parents. Their importance cannot be overstressed. Parents and teachers should give up their claims to monopoly over the child's education. This calls for other occasions than a conversation in a corner of the hall or staircase.

Implementation

A school building of the kind required by modern society involves high cost. Local and central government, administration, and accounting agencies should view this expense not in terms of the past but rather through considerations of the future. Any wrong decision in respect to schools might finally cause more cost and trouble than even the most expensive building program.

There is a big backlog demand in Germany which originates in the lack of construction between the two world wars, the relative increase of population, and effects of the war. Large sums are required particularly when the problem is viewed from the point of classroom crowding. Smaller classrooms, organization of the ninth and tenth obligatory year of schooling, extension of the general level school—all this will require more effort than ever. The differentiation of teaching methods and the strengthening of the teacher's position will add special rooms. Other cost factors will result from transfer of the educational task from home to school and the probable introduction of food service for pupils, as exemplified in England. The taxpayer should more readily see the importance of new schools by realizing that the child spends in school his most impressionable years, the most important time for development.

Society can measure this problem properly by realizing that education is decisive for the political future of a nation. To build schools is to provide buildings in which the fate of modern society will be decided. ◀



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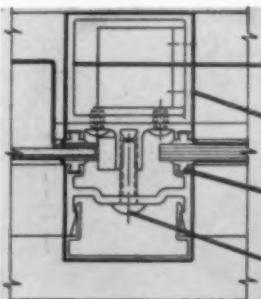
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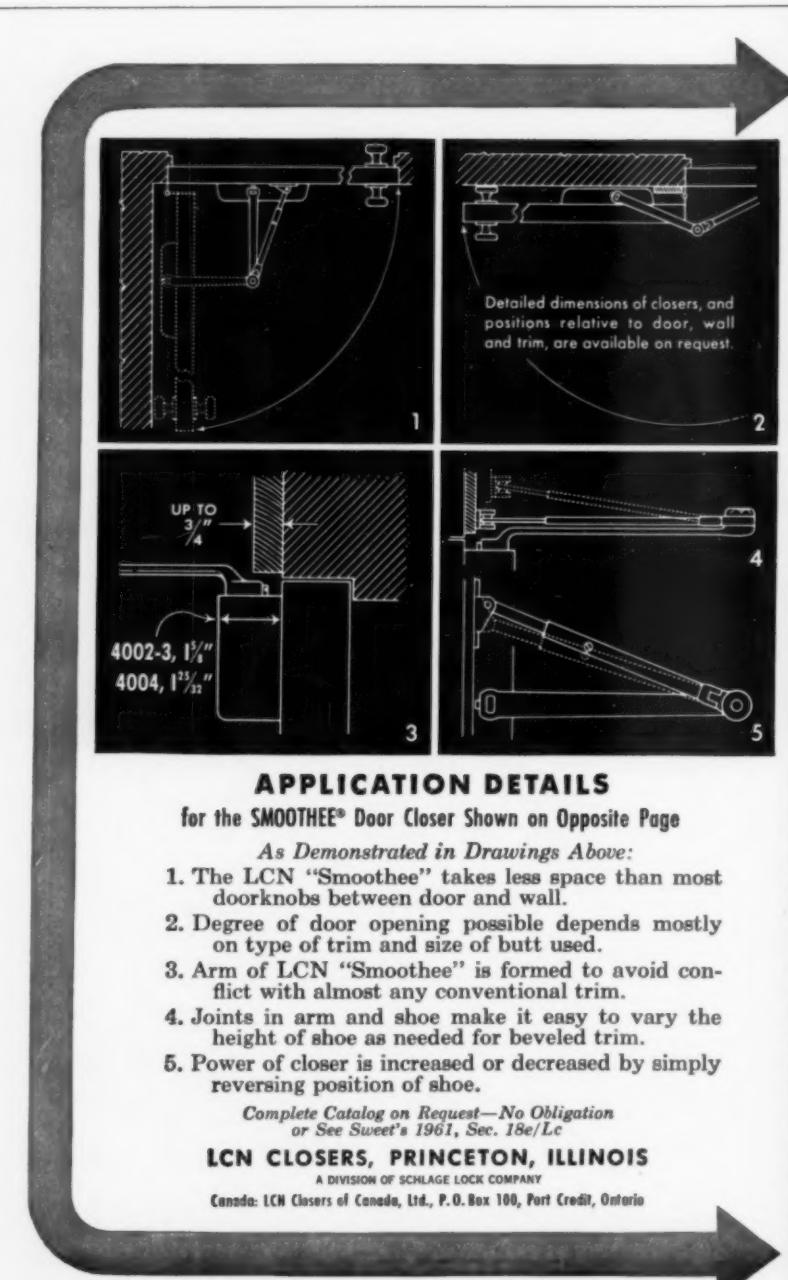
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Pitfalls of "or-equal" flooring specs

With floors just as with many other materials, an "or-equal" specification can lead to dispute and dissatisfaction for client and architect. The flooring material in question and the precise job it is to perform must be carefully considered before the specification is written. There are several reasons why it is not realistic to expect that there is a satisfactory substitute for a specific flooring material. First, floors play an important decorative as well as functional role in the finished building. They must be evaluated against many different needs and standards. Second, no two manufacturers make truly identical products. Formulation, colors, designs, and manufacturing processes all vary. And third, some flooring products have exclusive characteristics and therefore no "equals."

The architect's role

Because of the many variables to be considered and the importance of having the correct flooring material for each job, the architect should exercise maximum control in his flooring specifications. An "or-equal" specification invites, if not requires, the contractor to take control out of the architect's hands. By determining the precisely correct floor for each job, and then requiring that it be used, the architect is assured that the quality of his work is not compromised.

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Calendar

October 12-16: Annual Conference, National Trust for Historic Preservation, Waldorf-Astoria Hotel, New York City.

October 16-17: Public Relations Committee, the Octagon, Washington, DC

October 18-22: AIA Urban Design Committee, Coronado, California

October 19-20: Religious Buildings Committee, the Octagon, Washington, DC

October 27-28: Housing for the Aging Committee, the Octagon, Washington, DC

November 1-3: 14th Regional Meeting of the American Concrete Institute, Dinkler-Tutwiler Hotel, Birmingham, Alabama

November 9-11: Executive Committee Meeting, Boca Raton Hotel, Boca Raton, Fla.

November 18-22: Student Forum, the Octagon, Washington, DC

November 28-30: BRI 1961 Fall Conference, Mayflower Hotel, Washington, DC

AIA District and Regional Meetings

October 5: Minnesota Society of Architects Annual Meeting, Minneapolis, Minn.

October 18-22: California Regional Meeting, Coronado, California

October 19-21: Ohio Regional Meeting and Annual Convention, Architects Society of Ohio, Cleveland, Ohio

October 20-22: New England Regional Meeting, Hartford, Connecticut

October 26-28: Sixteenth Annual Forum of the Pennsylvania Society of Architects, The Inn, Buck Hill Falls, Pennsylvania

November 8-10: Texas Society of Architects Conference, Hotel Texas, Fort Worth, Texas

November 9-11: Florida Regional Meeting, Boca Raton Hotel, Boca Raton, Fla.

November 15: Gulf States Regional Convention, Capitol House Hotel, Baton Rouge, La.

December 8-9: Pennsylvania Society of Architects Board Meeting, Harrisburg, Pa.

Necrology

According to notices received at the Octagon between July 19, 1961 and August 11, 1961.

BURNS, TOM, Portland, Ore.

CAMPBELL, WILFRED A., Rochester, NY

DUELL, PRENTICE, Boston, Mass.

GROVES, THERON A., University City, Mo.

HIGGINS, CHARLES H., New York, NY

KIEHLER, ELMER G., Detroit, Mich.

MALASPINA, FRANK P., Jericho, NY

PULLARA, ANTHONY L., Tampa, Fla.

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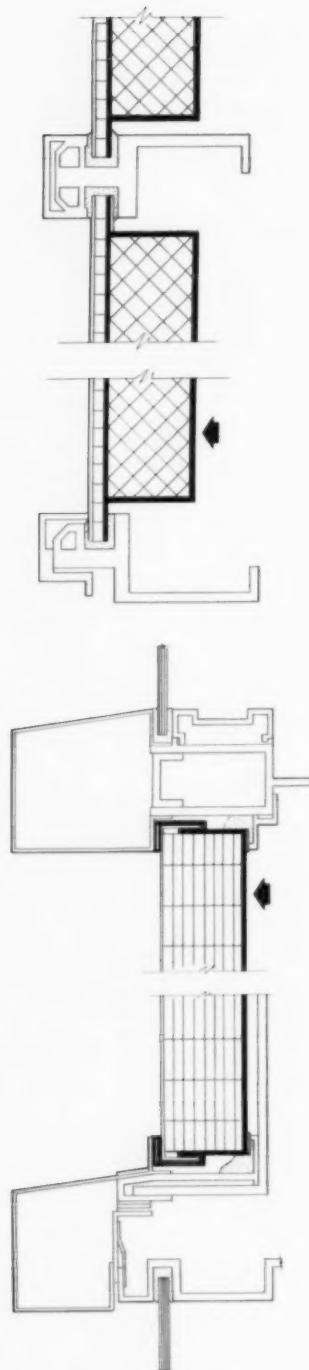
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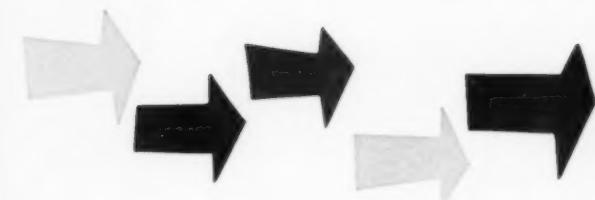


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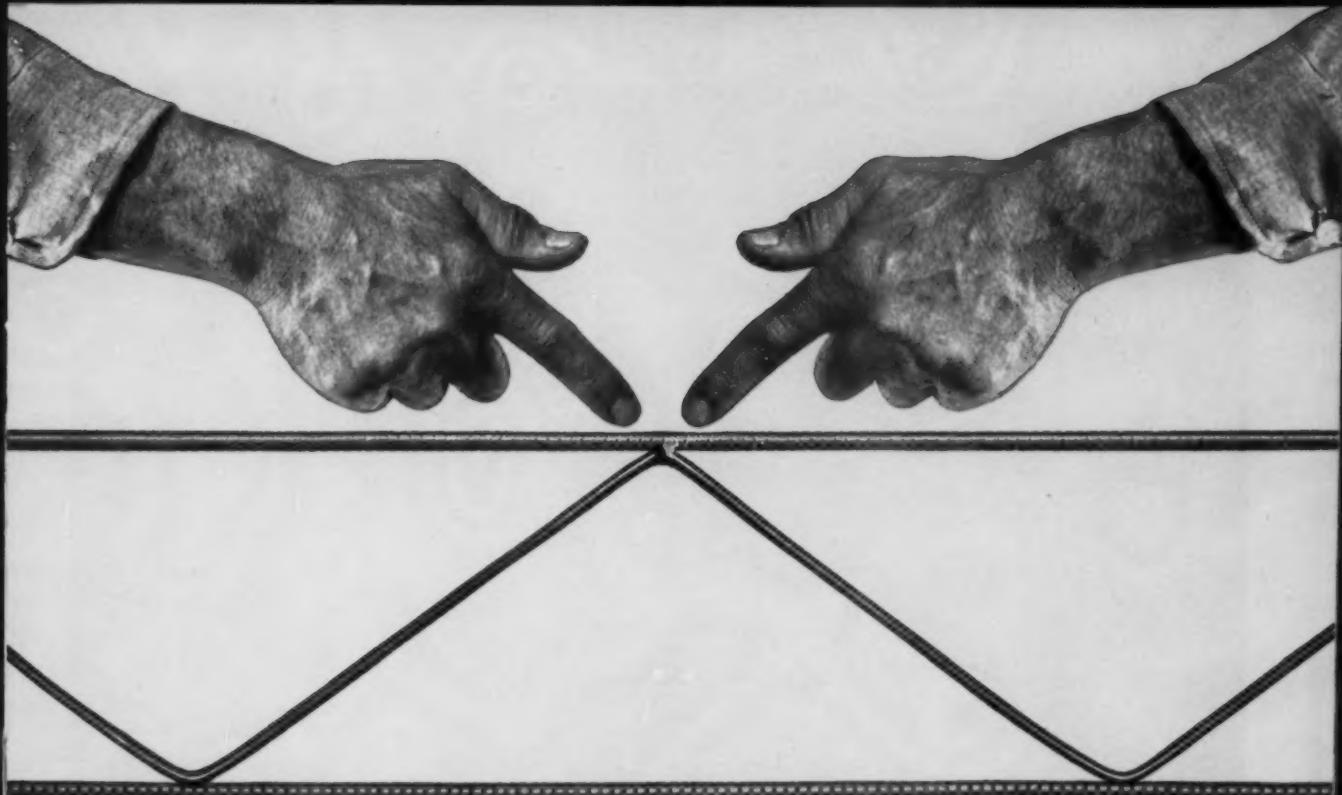
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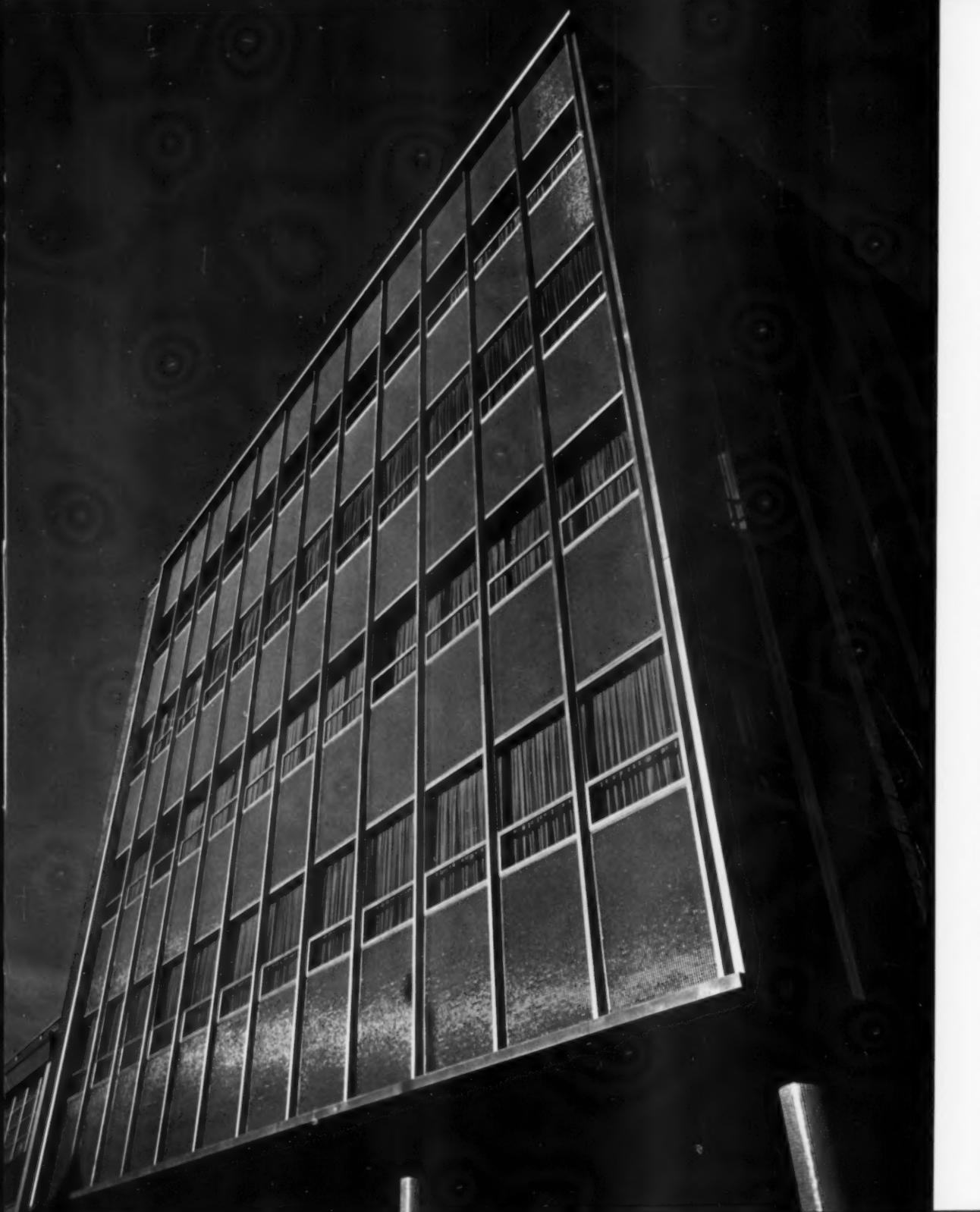


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PLATE NO. 716-A (ALSO NO. 716-B)

Architect: Emil Schmidlin.
Mosaic Medley Pattern No. 1778 in
unglazed ceramic mosaics.



PLATE NO. 716-B

PLATE NO. 715

Architect: William E. Lehman.
Panel Mfr.: Structural Panel Corporation.
Mosaic Medley Pattern No. 3015 in
unglazed ceramic mosaics.

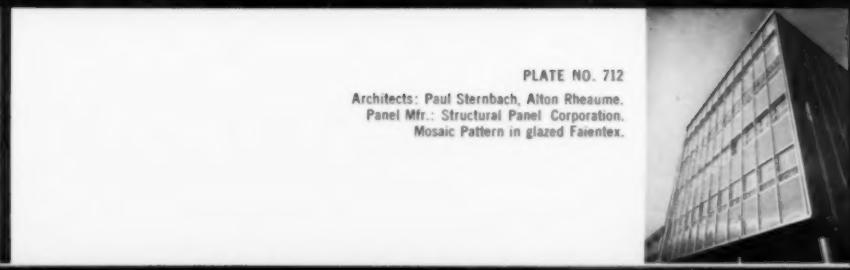


PLATE NO. 712

Architects: Paul Sternbach, Alton Rheaume.
Panel Mfr.: Structural Panel Corporation.
Mosaic Pattern in glazed Faientex.



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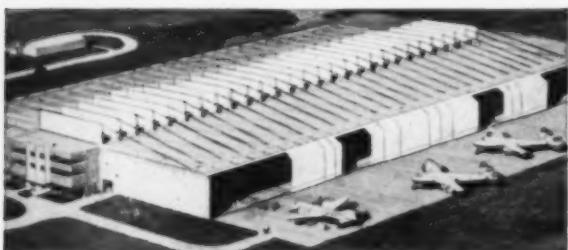
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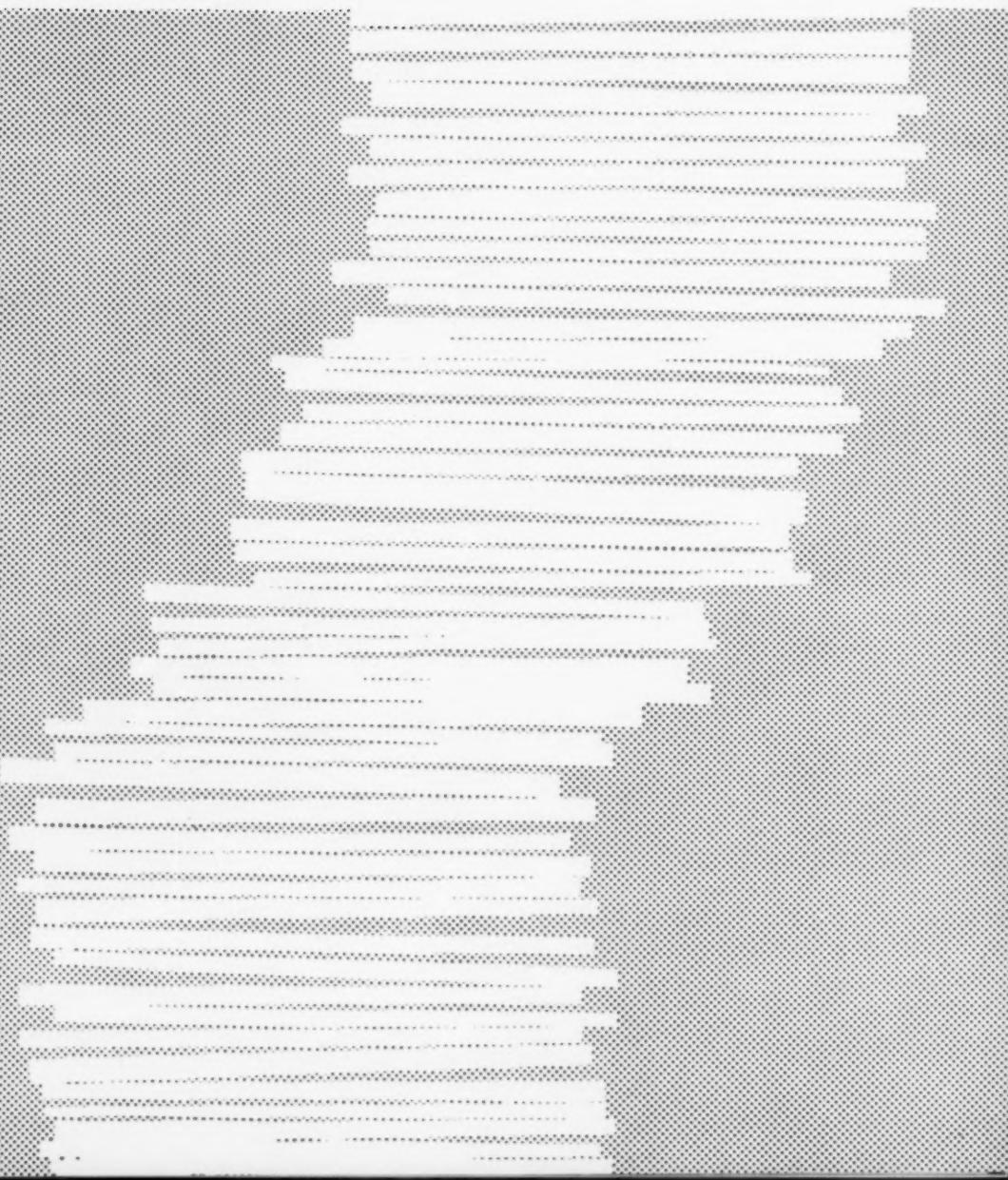
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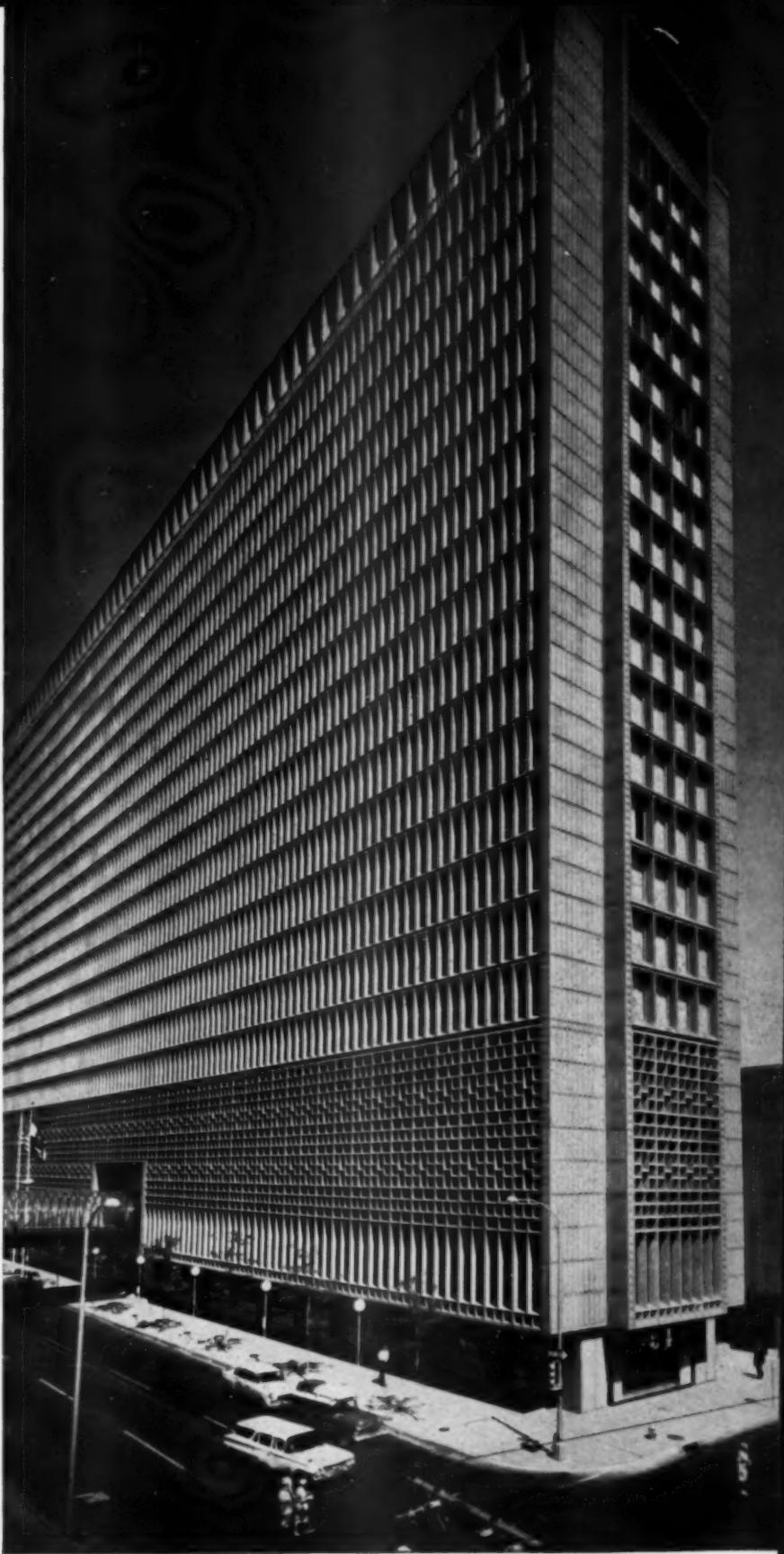
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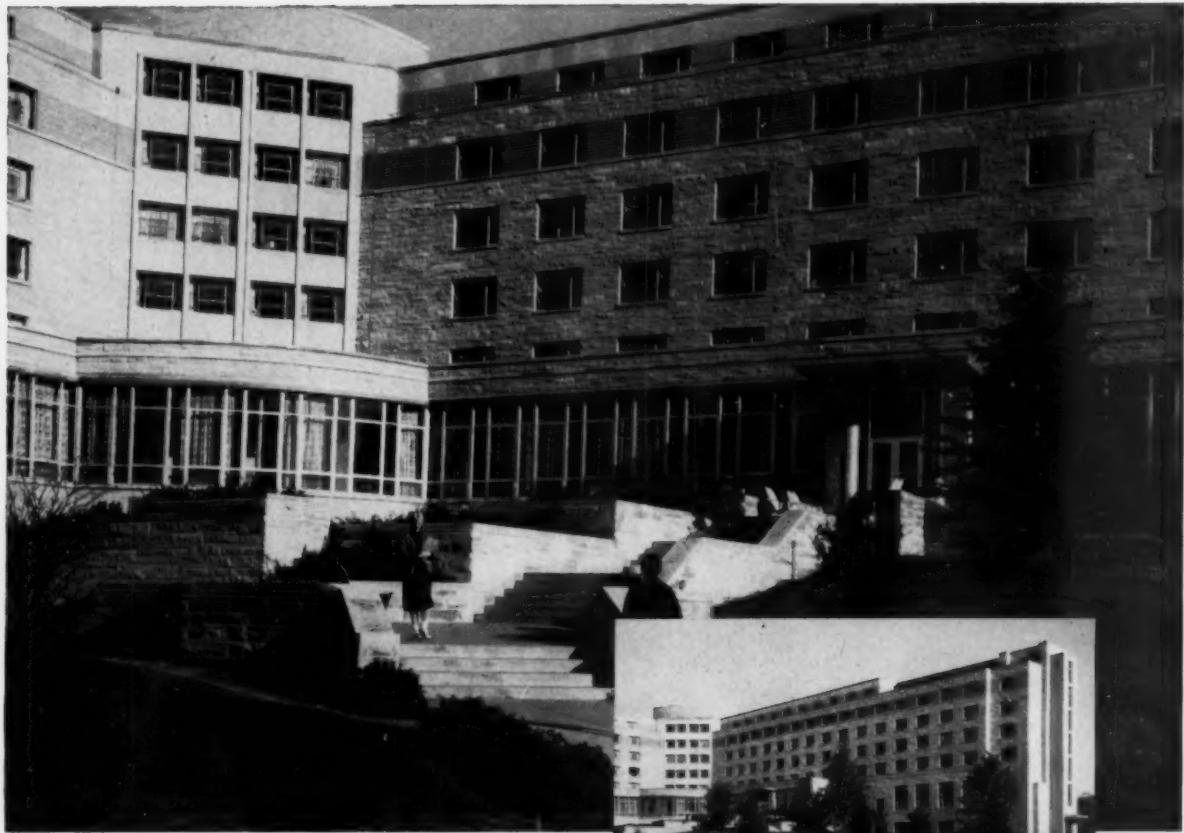
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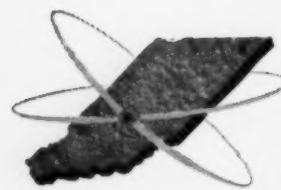




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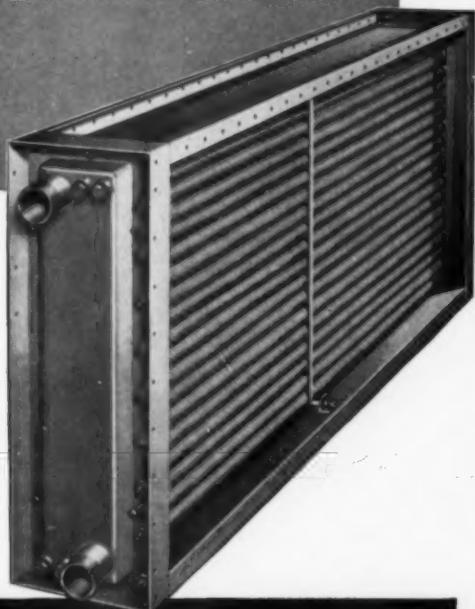
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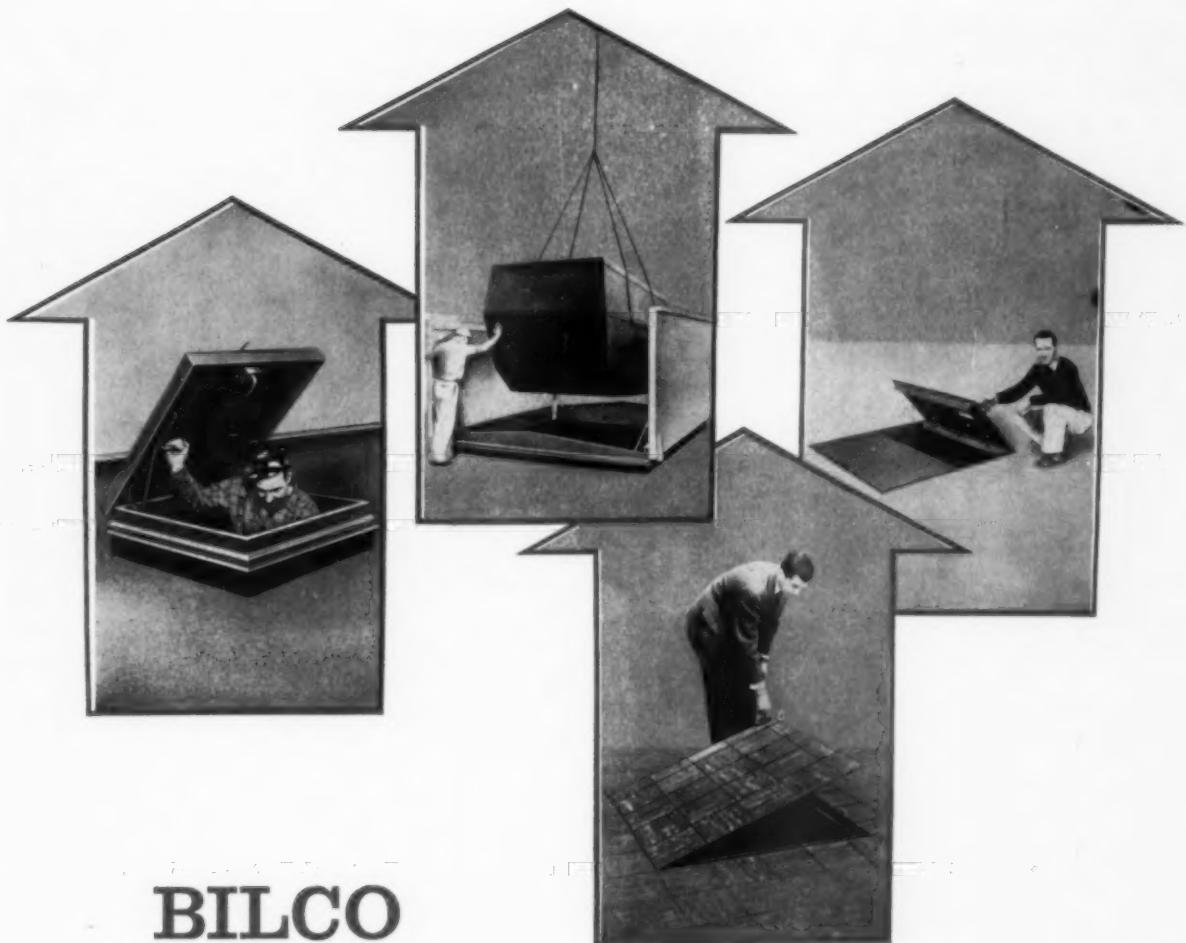
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Allied Arts

Art and Architecture

by Wolf Von Eckardt

The following is an excerpt from the introduction to "Mid-Century Architecture in America—Honor Awards of the American Institute of Architects, 1949-1961" to be published early in December 1961 by the Johns Hopkins Press.

► If our architecture expresses the spirit of our times, our best churches and temples, our best houses, offices, schools, and other buildings, give cause for optimism—certainly more cause than do the other arts.

The moment in history of many of the buildings shown [in the AIA Honor Awards book] has been called "the fearful 'fifties." It is a time in which most painters and sculptors still persisted in their disdain of humanism, retreating into uncommunicative, abstract confusion. The excuse is not hard to find. In our country this period began, it will be recalled, with headlines about the Berlin airlift and the Korean War, with McCarthyism and gaudy Senate hearings. It also began with the illusion that these United States had a monopoly on nuclear weapons and, perhaps, even on virtue. *Newsweek* proclaimed early in the 'fifties, "It is no wonder that . . . many consider the U. S. a land in which the Spirit—that refugee from most parts of the modern world—has made His home." Most of us sang "Goodnight Irene," thrilled to the eerie tune of "The Third Man Theme," read Gaylord Hauser's *Look Younger, Live Longer*, and launched an ever-mounting building boom by escaping to a picture window of our own in the suburbs.

A few of us, with John Keats, soon suspected *The Crack in the Picture Window* and worried with David Riesman about *The Lonely Crowd*. We preferred to read Hemingway's bitter *Across the River and Into the Trees* and Budd Schulberg's *The Disenchanted*. We admired Jackson Pollock and William de Kooning's rather savage and pessimistic art.

As America moved into the 'sixties the headlines were as black as ever with crises abroad and in our own South. The illusion of virtue had vanished as did our atomic monopoly. Our faith in America's absolute technological superiority was shattered as satellites followed sputniks and Commander Shepard followed Major Gagarin into outer space. What with television scandals and

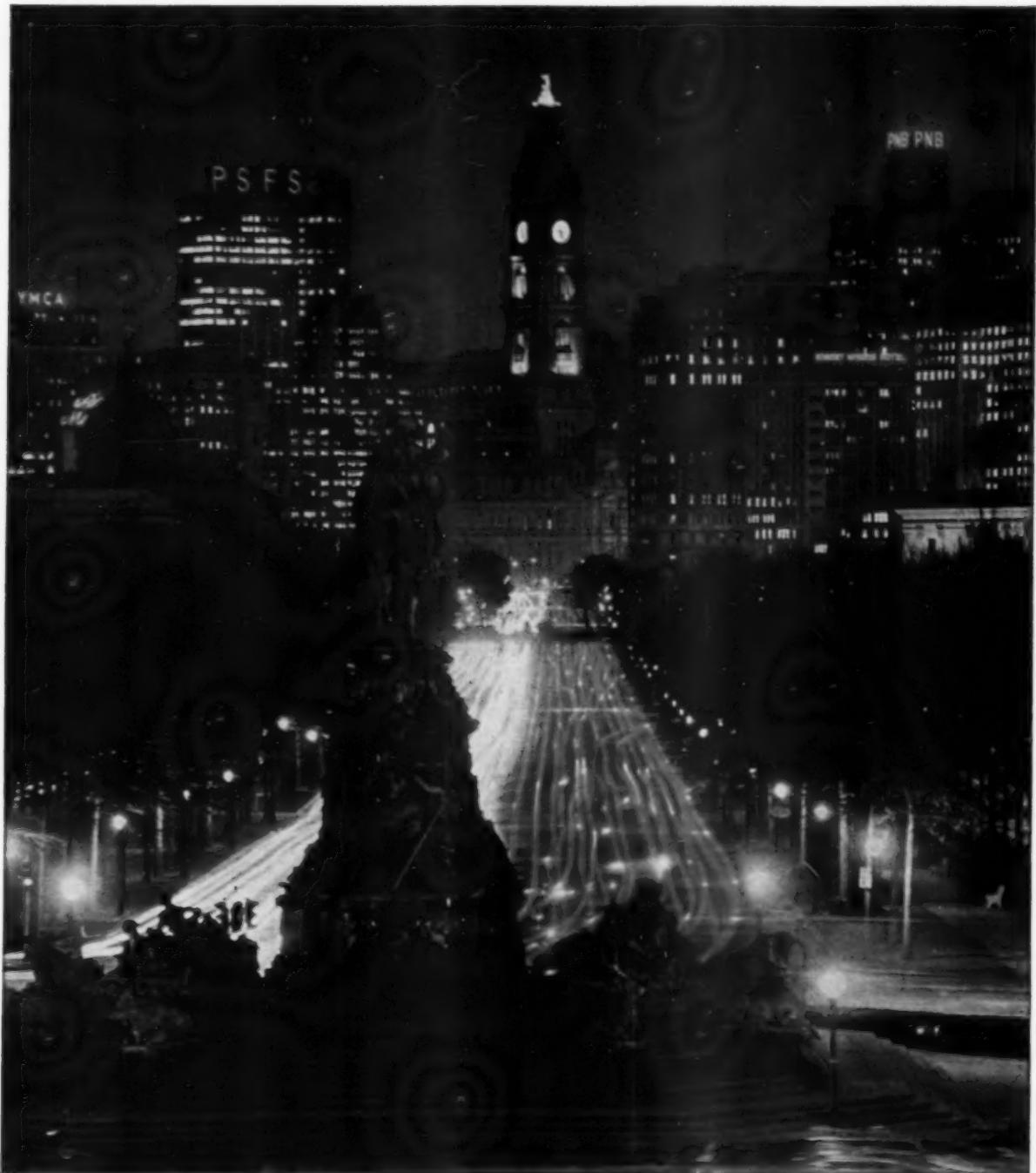
organization men convicted of price fixing, *Newsweek*, as Meg Greenfield observed in *The Reporter*, now wondered if "our culture . . . is going rancid." We considered ourselves, at any rate, not just rich, but an "affluent" society with, as John Kenneth Galbraith complained, "no highly developed sense of national purpose, with the overwhelming accent of life on personal comfort, with a dearth of public services and a surfeit of privately sold gadgetry, and with insufficient social discipline." The music writer of the *Encyclopaedia Britannica Yearbook* gave up naming the titles of the hit songs—mostly rock'n'roll—which filled the airwaves as "worthless trash." The best-seller was *Peyton Place*.

Yet, there was also a growing number of us who read *Exodus* and *Doctor Zhivago*, who mourned the untimely death of Albert Camus, and who accounted for the phenomenal output of classical records and good paperback books. This minority thought that the popular "tide of moral revulsion," was perhaps a healthy sign. It saw a significance in the fact that, in contrast to his predecessor, who reportedly flushed with anger over the modern design of a public building, the new President invited leading modern architects, along with other artists and "egg-heads," to his inauguration.

But Pollock and de Kooning still dominated the art world.

If architects shared these fluctuating emotions of uncertainty about our culture and its values, their architecture certainly did not. It continues in what critic Ada Louise Huxtable has termed "a singular state of vital and positive productivity." It was, if anything, more optimistic than ever before in our history, tending, in fact, towards buoyant romanticism. Some even saw a "modern baroque" in such buildings as Edward D. Stone's "pill factory," the Stuart Pharmaceutical Company Headquarters, and Minoru Yamasaki's Community Center on the Wayne University campus and his Reynolds Metals Company building in Detroit. Baroque or not, these and a good many other buildings dared a decorativeness which rivals that of the Alhambra and Venetian Gothic.

In their earlier, self-conscious and defensive stage, modern architects tended to insist they were mere technicians of function, just good old Yankee businessmen, who used their newfangled modernism only because it gave you the most shelter for your money. They "satisfied function, not fashion," they said. They still do. But they now realize, in Giedion's words, that "people want the buildings that represent their social and community life to give more than functional fulfillment. They want their aspirations for monumentality, joy, pride and excitement to be satisfied." ◀



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